FACTORS ASSOCIATED WITH THE FEASIBILITY AND ACCEPTABILITY OF MENTAL HEALTH SCREENING TOOLS IN ANTENATAL AND POSTNATAL PROGRAMS IN ZAMBIA: A CASE OF KAVU HEALTH CENTRE, NDOLA, ZAMBIA

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Master's Dissertation to obtain the Master's Degree in Primary Care Mental Health NOVA Medical School | Faculdade de Ciências Médicas

February 2019

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DEDICATION

To my late Parents Mr and Mrs Magirirane,

my dear wife Béatrice, and my lovely

children:

Vincent de Paul,

Marie Giselle,

Joseph and Pascal

May the Almighty God protect our family for ever and ever!

ACKNOWLEDGEMENTS

I do recognize that I couldn't complete this project without the input of several people. While it is very difficult to mention by name all those who contributed towards the completion of this research project, I would particularly like to thank the following people:

Professor Lucja Anna Kolkiewicz my supervisor for taking interest in this study from the start.

Professor Bellington Vwalika who reviewed my research project under ERES Converge Institutional Review Board and gave special advice from the experience point of view.

Mr. E. Mbewe who greatly assisted with data entry, cleaning and analysis using Epi-info.

Many thanks to the Kavu Health Centre Team: Dominican Sisters and the care providers in antenatal and postnatal programs who helped me to collect data.

I am very thankful to the Nova Medical School Research Ethics Committee and ERES Converge Institutional Review Board for their review and allowing me to conduct this study in an ethically approved manner.

Above all, I am greatly indebted to the mothers who consented to volunteer information used in this study.

LIST OF ABREVIATIONS

AIDS: Acquired Immunodeficiency Syndrome

AN: Ante Natal

DF: Degree of freedom

EPDS: Edinburgh Postnatal Depression Scale

GDP: Gross Domestic Product

HIV: Human Immunodeficiency Virus

IPRO: Island Peer Review Organization

KHC: Kavu Health Centre

MCH: Maternal and Child Health

NYSDOF: New York State Department of Health

PMHP: Perinatal Mental Health Project

PN: Post Natal

PND: Post Natal Depression

PPP: Post-Partum Psychosis

PRAMS: Pregnancy Risk Assessment Monitoring Systems

RFA: Risk Factors Assessment

SADC: South African Development Community

SSA: Sub-Saharan Africa

UTH: University Teaching Hospital

ABSTRACT

Introduction

Maternal depression is recognized worldwide as a major public health concern and is a leading cause of maternal morbidity. Suicide is an important cause of maternal mortality in the UK and in Northern Europe[11]. Kumar and Robson, in their 1984 "A prospective study of Emotional disorder with Child bearing women", confirmed the association between maternal depression and serious long-term consequences for maternal mental health[27]. A 2010 Zambian maternal depression study reported prevalence rates of 48 % and 37 % during the antenatal (AN) and postnatal (PN) periods respectively[38]. And screening for maternal mental disorders in primary care settings is not routine. [38] The purpose of this study is to explore the feasibility and acceptability of mental health screening in the antenatal and postnatal programs at Kavu Health Centre, Ndola, Zambia by mothers and care providers.

Methods

This was a cross-sectional study that gathered quantitative and qualitative data, which sought to investigate factors associated with the feasibility and acceptability of applying mental health screening tools in antenatal and postnatal programs. A group of 140 women were interviewed using a questionnaire to obtain information on demographic and medical risk factors for maternal depression, and an Edinburgh Postnatal Depression Scale (EPDS) and a Risk Factors Assessment (RFA) screening tools were administered. Health workers were interviewed using a Likert scale questionnaire about their opinions about the use of mental health screening tools after a brief exposure to their usage.

Results

All the 140 respondents who gave their written consent were included in the analysis. Of the 140 women, 54(38.5%) had depression of whom, 37(46.5%) and 17(28.5%) were antenatal and postnatal, registered respectively.

Conclusion

The study demonstrated that it was feasible and acceptable to administer Edinburgh Postnatal Depression Scale (EPDS) and Risk Factors Assessment (RFA) among women attending antenatal (AN) and postnatal (PN) programs. In these women, the administration of the two screening tools detected a high prevalence of depression. All care providers unanimously recommended that the mental health component should be assessed in the antenatal and postnatal programs

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1. INTRODUCTION

Maternal depression is increasingly worldwide recognized as a major public health concern and can have a negative impact on an individual's life that is far reaching, affecting work, family and the health and development of the baby. Maternal depression can lead to serious health risks for both mother and child, increasing the risk for complications during birth and causing long-lasting or even permanent effects on child development and well-being. In 1996 Ballard & Davies confirmed the association of the maternal depression with marital problems and psychological health of the partner[5]. The adverse effects of the maternal depression on the cognitive and social development of the infant were reported by Murray and Cooper in 2003[32]. This was also confirmed by studies done in Zimbabwe where researchers found that depression is one of the most important causes of mental morbidity and disability in developing countries. (43, 53, 1)

In Zambia, like in other low income countries, the prevalence of maternal depression is high. This was confirmed by Mwape et al. who reported maternal depression prevalence rates of 48 % and 37 % during the antenatal (AN) and postnatal (PN) periods respectively[38]. This was in accord with an earlier study of 2009, that was undertaken to determine mental distress among primary care attendees, that reported a prevalence rate of 12.4 % and 15.4 % in men and women respectively.[10] Despite there being high levels of perinatal depression, there is no routine screening and treatment for common antenatal (AN) and postnatal (PN) mental disorders in primary care settings. [38] Mental illness constitutes a large proportion of the burden of disease in Zambia. Mental health problems are likely to increase, taking into account the extent of predisposing factors like high fertility rate, poverty, HIV/AIDS and unemployment[35]. The current system of mental health care is based largely on secondary and tertiary health institutions. When we ask what has been done since those previous studies, there seems to be no clear-cut answer, thus based on what is existing within the region, the experience in other african countries shows that the management of perinatal depression in primary care is possible, [South Africa [20] Nigeria[17] Kenya[23] Rwanda [19-46] Swaziland[23]], and generates good health outcomes. Different stepped care approaches have been used in different countries to provide care to perinatally depressed women[4,6,16,17,18,20,29,40,45,48] and could be used in the Zambian context. The main question is, "what are the factors associated with the feasibility

and acceptability of applying mental health screening tools in antenatal and postnatal programs in Zambia?''

At least two thirds of people worldwide who are mentally ill receive no treatment, despite the fact that up to 30% of the world's population is expected to suffer from clear cut mental illness each year[3]. Worldwide, the situation is the worst in 70% of countries in Africa and 50% in Southeast Asia which are spending less than 1% of their health budget on mental health care.[44]The World Health Organization (WHO) states that the quarter of the world's population with the most common forms of mental illness (usually mixtures of depression and anxiety) should be treated in primary health care facilities rather than in specialized psychiatric institutions.[33] These facts pose a great challenge to governments of lower income countries, most of whom are concentrated in the sub-Saharan region like Zambia.

The study conducted by Murray and Cooper in 1997 reported a deleterious impact of both maternal depression and racial adversity on the quality of the mother – infant relationship[30]. Three years earlier, Harpham had reported that the infants from poor communities in the developing world are especially vulnerable in this regard since they are subjected to parenting which is under the strain of both marked socio-economic hardship and high rates of depression[18]. In a South African peri-urban settlement, Murray et al. found that one in three mothers had depression in the early postpartum period[31], a rate three times higher than that which would be expected in developed countries [12, 41]

In Africa, where mental disorders account for a huge burden of disease and disability, and where in general less than 1% of the already small health budgets are spent on these disorders, the need for action is acute and urgent, [15] especially in Zambia where mental health services at the primary care level are most of the time lacking. Without doubt, when it comes to the implementation of mental health into primary care, one can plausibly argue that this should start in antenatal programs because "Maternal and child health programs are the most logical and appropriate platforms for integration of mental health care in an equitable, accessible and holistic manner."[47] In Zambia, there seems to be no functional mental health plan at the primary care level. The problem is that perinatal mental disorders, especially depression and anxiety, usually go unrecognized and untreated with adverse consequences for the mother, the child and the family. The purpose of this study was to determine if mental health screening was feasible and acceptable by both service users and care providers in the antenatal and postnatal programs. Early detection of depression symptoms would help care providers to assist with appropriate interventions at the right time.

2. STATEMENT OF THE PROBLEM

In antenatal (AN) and postnatal (PN) programs maternal depression remains undetected and untreated with sequelae persisting beyond the perinatal period. The introduction of mental health assessment will help to detect depression symptoms during antenatal and postnatal visits would facilitate the early treatment of the depressed women and this could positively contribute to the avoidance of maternal, child and family unit challenges, and many other long term consequences on the children born from the perinatally depressed mothers. It was further plausibly argued that the introduction of mental health screening tools such as Edinburgh Postnatal Depression Scale (EPDS) and Risk Factors Assessment (RFA) in antenatal (AN) and (PN) programs; could improve the mental health of pregnant women as it had been demonstrated in some countries like South Africa and Nigeria. It was in this vein that this study focused on factors associated with the feasibility and acceptability of applying mental health screening tools in antenatal and postnatal programs at Kavu health Centre, Ndola, Zambia.

3. JUSTIFICATION OF THE STUDY

The justification of this study lay in the fact that usually, perinatal depression passes undetected at the primary care level with negative consequences on the mothers, children and families[32]. It is imperative to install a systematic screening activity of mental health during the antenatal and postnatal visits, of women to health facilities in Zambia. Up to today, little had been done in this area from the research point of view to explore different ways of implementing screening tools in antenatal and postnatal programs in Zambia. This was the reason why another study was needed to determine if screening tools which had been successfully used in other countries could be used in the Zambian context. A study on the feasibility and acceptability of the Edinburgh Postnatal Depression Scale (EPDS) and the Risk Factors Assessment (RFA) in the antenatal and postnatal programs was needed and would help understand, on one side, the care provider's point of view regarding the screening tools, and, on the other hand, the acceptability of the screening tools by the service users as well.

4. LITERATURE REVIEW

4.1. Introduction

This chapter discusses literature from an empirical perspective, by looking at the global, regional and local perspectives. Some effort is made in trying to bring out the research conducted by Zambian authors in relation to maternal, child and mental health. The Zambian mental health system is examined and compared to what literature says concerning what is taking place in other African countries.

The burden of mental neurological health contributed 13 percent of the global burden of disease in 2001 as reported in the World Health Report[57], and is estimated to rise to 14.6 percent in 2020; 4 of the 10 leading causes of disability, and 28 percent of years of life lived with a disability. In 2010, a Zambian study that was conducted Mwape et al. reported prevalence rates of 48 % and 37 % during the antenatal (AN) and postnatal (PN) periods respectively[38]**.** Many women suffer from depression before and during pregnancy, or after childbirth. The research on postnatal depression in developing countries reported rates of 10-36 percent of new mothers. Postnatal depression is of great public health interest because it results in adverse cognitive, emotional and physical outcomes for children.

The study proposed is informed by the works done by various authorities and the flow is outlined in the preceding paragraphs with the main focus articulated by the National Institute for Health Care Management, (2010) and revised by Zucker in 2015[58], commissioner at New York State Department of Health.

The term maternal depression is an all-encompassing term for a spectrum of depressive conditions that can affect mothers. This spectrum of conditions includes prenatal depression, the "baby blues," postpartum depression and postpartum psychosis. The maternal depression affects approximately 10 to 20 percent of women and can lead to serious health risks for both the mother and infant increasing the risk for costly complications during birth and causing long-lasting or even permanent effects on the child development and well-being.

4.2. Prenatal Depression

Prenatal depression encompasses major and minor depressive episodes beginning during the pregnancy and lasting up to six months to a year after pregnancy.

During pregnancy

Ten to 20 percent of pregnant mothers are affected with prenatal depression and experience the following signs and symptoms: crying, weepiness, sleep problems, fatigue, appetite disturbance, anhedonia (loss of enjoyment of activities), anxiety, poor fetal attachment and irritability.

Baby Blues

Begins during the first few weeks after delivery (usually in first week, peaking at 3 to 5 **days).** Symptoms usually resolve by two weeks after delivery.

As high as 80 percent of new mothers experience baby blues with the following signs and symptoms: crying, weepiness, sadness, irritability, exaggerated sense of empathy, anxiety, mood lability ("ups" and "downs"), feeling overwhelmed, insomnia; trouble falling or staying asleep; fatigue/exhaustion, and frustration.

4.3. Postpartum Depression

Usually within the first two to three months post-partum, though onset can be immediate after delivery (distinguishable from "baby blues" as it lasts beyond two weeks post-partum), 10 to 20 percent of new mothers are affected with postpartum depression with the following signs and symptoms: Persistent sadness, frequent crying even about little things, poor concentration or indecisiveness, difficulty remembering things, feelings of worthlessness, inadequacy or guilt, irritability, crankiness, loss of interest in caring for oneself, not feeling up to doing everyday tasks, psychomotor agitation or retardation, fatigue, loss of energy, insomnia or hypersomnia (excessive daytime sleepiness), significant decrease or increase in appetite, anxiety manifested as bizarre thoughts and fears, such as obsessive thoughts of harm to the baby, feeling overwhelmed, somatic symptoms (headaches, chest pains, heart palpitations, numbness and hyperventilation), poor bonding with the baby (no attachment), lack of interest in the baby,

family or activities, loss of pleasure or interest in doing things one used to enjoy (including sex) recurrent thoughts of death or suicide.

4.4. Postpartum Psychosis

Postpartum psychosis usually starts within 2 to 4 weeks of delivery, but can start as early as 2 to 3 days after delivery (and can occur anytime in the first year) affecting1-2 per 1,000 new mothers. The following signs and symptoms are experienced: Auditory hallucinations and delusions (often about the baby and often of a religious nature), visual hallucinations (often in the form of seeing or feeling a presence of darkness), insomnia, hopelessness, feeling agitated, angry, anxiety, paranoia, distrusting of others, delirium, confusion, mania (hyperactivity, elated mood, restlessness), suicidal or homicidal thoughts, bizarre delusions and commands to harm the infant. Postpartum psychosis (PPP) is a severe mental disorder that occurs in 1-2/1,000 deliveries. Rates of PPP in women with bipolar disorder are ~25-50%; rates increase to over 70% if there is also a family history of PPP. Postpartum psychosis often strikes abruptly in the first two weeks after delivery, or it may develop slowly over months if early postpartum depression is untreated. It is important to differentiate PPP from postpartum depression, which is a non-psychotic condition that occurs in 10 – 20 percent of childbearing women. PPP presents a complex picture of mood cycling, cognitive impairment, and psychosis and includes rapidly shifting moods, agitation, bizarre hallucinations, and delusions; the delusions may be organized around the infant.

The cognitive disorganization and ever changing moods add to the unpredictable nature of this condition, which has a significant risk of suicide and infanticide. The safety of mother and baby is paramount. As such, this illness is a psychiatric emergency that requires immediate hospitalization, resulting in separation of the infant from the mother. Preventive strategies are warranted in the prenatal period; these include screening for mood disorders, particularly bipolar disorder in the patient or family. While the prognosis is good and there are rare episodes between pregnancies, there is a 50% recurrence rate with subsequent childbirth. Postpartum psychosis has a unique precipitant, namely childbirth.

4.5. Prevalence of Maternal Depression

Survey data collected from new mothers, between 2004 and 2008, through the CDC's Pregnancy Risk Assessment Monitoring Systems (PRAMS), indicate that approximately 14.5% of women reported symptoms of postpartum depression within three months after the birth of a child (CDC 2011). Data were collected in 22 states, with the highest prevalence (21.3%) reported in Tennessee and the lowest (9.8%) reported in Minnesota. In New York State, 12.7%

of mothers reported symptoms of postpartum depression. 2011 NYS PRAMS data showed 3.1% of women reported feeling sad, 1.3% reported feeling hopeless, and 5% reported feeling slowed down – all in the months after childbirth. Note that the questions for the two surveys were different, and so data cannot be compared.

In 2011, the New York State Department of Health (NYSDOH) partnered with the Island Peer Review Organization (IPRO) to conduct a Medicaid Perinatal Care Study to assess prenatal and postpartum care services provided to women enrolled in Medicaid, as related to statewide Medicaid Prenatal Care standards. The study found that 18% of women screened at an initial prenatal visit, 21% of women screened at a third trimester visit, and 12% of women screened at a postpartum visit, had symptoms of depression.

4.6. Risk Factors for Maternal Depression

The most common risk factor for maternal depression is a previous episode of prenatal or postpartum depression. Other factors associated with maternal depression include: Personal or family history of anxiety, depression or other mood disorders, including prenatal or postpartum depression; current or past history of alcohol or other substance abuse; life stress, poor quality or no relationship with the baby's father, lack of social support or absence of a community network; unplanned or unwanted pregnancy; difficult pregnancy or delivery, including preterm birth, multiple births, miscarriage or stillbirth, birth defects or disabilities or other pregnancy complications; maternal age <24 years of age; lower maternal socioeconomic status.

While the above factors have been associated with a higher risk for maternal depression, depression also occurs among women without these risk factors.

4.7. Health Risks of Maternal Depression to Mother and Infant/ Partner/ Family

Maternal depression affects the entire family, and may have significant adverse effects on the health of both the mother and infant. Strong and consistent evidence indicates that a mother's untreated depression undercuts young children's development, and can affect learning, academic success, and success later in life. Maternal depression can cause long-lasting effects on children's brain architecture and persistent disruptions of their stress response systems.

A thorough review of this research by the National Research Council and Institute of Medicine finds that maternal depression endangers young children's cognitive, socio-emotional and behavioral development, as well as their learning, and physical and mental health over the long term. Depression disproportionately affects low-income mothers, putting their children at the highest risk for poor developmental outcomes. For low-income mothers, depression is

embedded in an array of risk factors including financial and housing instability, lack of social supports and limited resources. Mothers of young children living in poverty and deep poverty are particularly affected by depression. Rates of depression for mothers of young children go up as income goes down. About one in nine infants living in poverty has a mother who is severely depressed, and more than half have a mother experiencing some level of depression. Homeless mothers also experience disproportionately high rates of depression, often compounded by their circumstances.

Maternal depression can significantly affect the ability of mothers and infants to form healthy and secure emotional bonds and reduce the quality of maternal-infant interactions, which in turn can have serious and permanent impacts on children's health and development. Children born to mothers with maternal depression are at higher risk for: delays in social, emotional, cognitive and physical development; long-term mental health problems; reduced utilization of preventive health care services (such as immunizations) and higher use of emergency rooms and other medical services; lack of breastfeeding and early discontinuation of breastfeeding. Maternal depression can also impact overall family functioning, and increase the risk for paternal depression.

The current system of mental health care in Zambia is based largely on secondary and tertiary health institutions. Mental health services at the primary care level are either inadequate or lacking altogether[35]. In 2008, Mwanza et al. already suggested the implementation of mental health into primary care.[21] One decade later, there is no mental health plan in primary health care centers. The key factors underlying the failure to integrate mental health into primary care have been pointed out in different research works on mental health in Zambia (34, 35, 36, 37, 49, and 52) and they are similar to those described in research works on mental health in other low and middle income countries. (2, 20, 21, 25, 26, 27, 39, 42, 46, 51, 55).

In the Zambian health sector, mental health care gets the most meagre funding among the health services being delivered. This is evidenced by resource allocation for mental health service delivery and a lower priority given to mental health issues, where the provision of service to antenatal and postnatal mental health issues of women have also been misplaced. For instance, Kapungwe et al.[24] demonstrated that by 2011 government financing for health delivery was mainly oriented towards integrated health care through the budgets in the districts, but the proportion of the total budget spent on mental health services by the Ministry of Health remained below one per cent at 0.38%. This was not unique to Zambia as most countries, especially developing ones spent negligible amounts of resources on mental health activities in comparison with general health services. Most of the time, the resources are inappropriately allocated and as such, they fail to meet the mental health needs of the people. The allocation of resources for mental health in developing countries falls within the range of 0.5 to 1 per cent of the country's Gross Domestic Product (GDP). This overt funding neglect may be based on the

stigma that is attached to mental illness. Mental ill-health-related stigma has a great influence on policy decisions, access to care, health insurance, employment discrimination, marriage, access to education, loan facilities and allocation to research.[9] This brief description gives a picture of lack of adequate resources when it comes to mental health service delivery in Zambia, a situation which pertains to the majority of low and medium income group countries. This therefore poses a challenge in the issue of care given to antenatal (AN) and postnatal (PN) mothers in their quest for mental health services at primary health care level.

In South Africa, the Perinatal Mental Health Project (PMHP) under the University of Cape Town has already implemented the Edinburgh Postnatal Depression Scale (EPDS) and the Risk Factors Assessment (RFA) since 2013. This has greatly improved the wellbeing of women in antenatal and postnatal settings. In March 2018 an academic visit was undertaken by this principal researcher for a week at Alan J. Fisher Centre for Public Mental Health working with care providers under the Direction of Doctor Simone Honikman; where adequate information was gathered, regarding the implementation of mental health in antenatal and postnatal programs which would be very beneficial to pregnant women in Zambia who could enjoy benefits from mental health screening. Such benefits would only ensue if the implementation of mental health screening; using primary health care approach was predicated on the introduction of the Edinburgh Postnatal Depression Scale (EPDS) and the Risk Factors Assessment (RFA in antenatal and postnatal programs similar to South Africa, whose success depends on studies such as the one being proposed in this document for Zambia.

In 2010, Cyimana conducted a study on “Impact of HIV/AIDS on postnatal depression among postnatal mothers at the University Teaching Hospital Lusaka Zambia" and used the Edinburgh Postnatal Depression Scale (EPDS) to assess depression symptoms in mothers attending postnatal programs and 229 women accepted to be screened[14]. The study confirmed that postnatal depression was not an insignificant condition in the selected hospital population of postnatal mothers at UTH. However, HIV/AIDS was not statistically significantly and independently associated with postnatal depression (PND) amongst the mothers, though the use of mixed feeding and higher parity were. According to Cyimana, it is imperative for health practitioners to consider the possibility of postnatal depression (PND), particularly for those with risk factors, including adverse socio-economic conditions and poor obstetric and neonatal outcomes, so as to counsel and refer them for further appropriate care as necessary. Cyimana recommended that further research is needed to better characterize the postnatal depression (PND) in the different populations in Zambia, including urban/rural, hospital/community based deliveries and including a wide cross-section regarding cultures and socioeconomic status. It is in the same vein that this study will be conducted at primary care level, to determine the

factors associated with the feasibility and acceptability of the Edinburgh Postnatal Depression Scale (EPDS) and the Risk Factors Assessment (RFA) in antenatal and postnatal programs.

In conclusion, from the literature reviewed, it has been observed that, despite high levels of perinatal depression, there is no routine screening and treatment of common perinatal or postnatal mental disorders in primary care settings in Zambia. Furthermore, it has been demonstrated that there has not been enough effort in the past nor at present, that aimed at improving the detection and treatment of mental disorders arising in connection to pregnancy and child birth. It is to this effect that this study aims at investigating the possibility of introducing interventions that have been proven to work elsewhere in similar situations to Zambia, and ameliorate the burden of mental health problems in women who are pregnant and/or have given birth.

5. RESEARCH QUESTION

What are the factors associated with the feasibility and acceptability of applying mental health screening tools in antenatal and postnatal programs in Kavu Health Centre, Ndola, Zambia?

6. OBJECTIVES

6.1. General Objective

To investigate factors associated with feasibility and acceptability of applying mental health screening tools in antenatal and postnatal programs at Kavu Health Centre, Ndola, Zambia.

6.2. Specific Objectives

1. To assess the mental statement of the women attending the antenatal (AN) and postnatal (PN) programs at Kavu Health Centre in Ndola
2. To administer screening tools: the Edinburgh Postnatal Depression Scale (EPDS) and the Risk Factors Assessment (RFA) to women attending antenatal (AN) and postnatal (PN) programs at Kavu Health Centre in Ndola

3. Establish the outcome of the screening tools: the Edinburgh Postnatal Depression Scale (EPDS) and the Risk Factors Assessment (RFA) results from women attending antenatal (AN) and postnatal (PN) programs at Kavu Health Centre in Ndola.

4. To determine factors associated with the feasibility and acceptability of administering screening tools among women attending antenatal (AN) and postnatal (PN) programs at Kavu Health Centre in Ndola

5. To determine the feasibility and acceptability of applying mental health screening tools from the health care workers at Kavu Health Centre in Ndola

7. RESEARCH METHODOLOGY

7.1. Study site

Zambia is situated in sub-Saharan Africa (SSA) and forms part of the Southern Africa Development Community (SADC). The country has a geographical area of 753,000 square kilometers. Being a former British colony, Zambia has adopted English as its official language although it has 72 ethnic groups and other major languages spoken include Nyanja, Tonga, Bemba and Lozi.

Figure 1. Map of Zambia

Source:www.worldatlas.com/webimage/countries/africa/zm.htm

(www: worldometers.info accessed 5/9/18) In January 2018 Zambia's population was estimated at 17,609,178, with median age at 17.2 and fertility rate at 5.28 births per woman, and a life expectancy of 53.74 years. This makes Zambia to give an impression of having a young

population. With the fertility rates that remain higher than 3 births per woman, one can plausibly argue that there is still a serious call towards maternal child health issues let alone the seemingly neglected aspect regarding incorporation of antenatal (AN) and postnatal (PN) mental health services at primary health level.

7.2. Study design

This was a cross-sectional study. The collection of quantitative data involved service users, as targets of the Edinburgh Postnatal Depression Scale (EPDS) and the Risk Factors Assessment (RFA) in the antenatal (AN) and postnatal (PN) activities.

There is another group made up of health workers who were interviewed using a Likert scale questionnaire to obtain their opinions regarding the use of antenatal (AN) and postnatal (PN) screening tools after a brief exposure to their usage.

7.3. Target and study population

During the study process, the respondents were captured at a specific point in time and specific groups targeted:

- Pregnant women at any gestational period attending antenatal (AN) programs at Kavu Health Centre in Ndola.
- Women who have delivered babies attending postnatal (PN) programs at Kavu Health Centre in Ndola (maximum one year after delivery).
- Health workers in the maternal and child health Unit (MCH) at Kavu Health Centre in Ndola.

7.4. Inclusion criteria

All consenting women with antenatal (AN) and postnatal (PN) (maximum 1 year after delivery) records attending have been recruited to participate in the study. All the recruited women had to present their antenatal cards or the Under Five Cards of their children. All consenting mothers had to put a thumb print or a signature on the consent form.

7.5. Exclusion criteria

Women who had children aged one year and above were excluded from the proposed study. Other women who were excluded from the study were: those who had had stillbirth within the period of one year and those who had lost children or husbands in 2018 to avoid the influence of the bereavement on mental status of pregnant and delivered women.

7.6. Sample Size Determination

Statcalc (cross-sectional survey) program software of Epiinfo version 7.2, was used to calculate the sample size. Thus taking the confidence interval at 95%, with 5% level of significance, power 80%, and taking the outcome in unexposed group for our variable of interest (Postpartum depression) at 70%, our sample size was calculated at 139 rounded to 140. Thus, the sample for participants in the clients (pregnant and delivered women) was 140. To this effect, proportionately, the antenatal women would be 80 consequently, postnatal women were 60. This proportionate allocation took into consideration the research study done by Mwape et al (2010)[38] which reported 48% depression in antenatal women and 37% in postnatal women. In the same vein, the study sampled 8 of the care providers totaling 10% of the total staff working in Kavu health Centre.

7.7. Sampling methods

A simple random sampling technique was used for selecting sample units in the categories for antenatal (AN) and postnatal (PN) women respectively.

7.8. Data analysis

Data collection was by predesigned and validated screening tools, Edinburgh Postnatal Depression Scale (EPDS) and Risk Factors Assessment (RFA) for antenatal and postnatal women. (See appendix 1 and 2).

Secondly, other data were collected from care providers using a structured questionnaire, with Likert Scale scoring system. (See appendix 3)

For the data obtained using the Edinburgh Postnatal Depression Scale (EPDS) and the Risk Factors Assessment (RFA) screening tools, the analysis was in three stages after spread sheets had been developed, using Create form or questionnaires software in EPIINFO version 7.2. First stage was univariate analysis where counts, proportions, percentiles and measures of central tendency were obtained. The second stage was bivariate analysis where the chi-square

was used to measure associations between variables of interest between the Edinburgh Postnatal Depression Scale (EPDS) and the Risk Factors Assessment (RFA). Third stage analysis involved unconditional logistic regression where confounders were ruled out and risk factors independently associated with outcome variables of the Edinburgh Postnatal Depression Scale (EPDS) were observed. Any p-value of less than five percent was taken to be statistically significant.

The group of health workers was interviewed using a Likert scale questionnaire on their opinions regarding the use of mental screening tools after a brief exposure to the usage the tools. A student's t-test was not run due to the fact that our continuous variables had been already sub-categorized and precoded during the questionnaire construction.

8. METHODS

8.1. Study Design and Data Handling

This was a cross-sectional study with a target group being all the women who received antenatal and postnatal care at KHC from the second October to the second November 2018
Respondents for the study sample were eligible to take part in the study if they so wished. All consenting women with antenatal (AN) and postnatal (PN) (maximum 1 year after delivery) records attending had been recruited to participate in the study. All recruited women had to present their antenatal cards or the Under Five Cards of their children.

Based on the Edinburgh Postnatal Depression Scales (EPDS) the classification of scores from respondents was grouped in three categories of depression. Thus, a score of fourteen and more (≥14) would constitute severe depression. A score of ten to thirteen (10-13) would constitute moderate depression while a score of 8-9 would constitute mild depression. Of those approached to participate, the acceptance/response rate was 100 percent. Similarly, based on the Risk Factors Assessment, the classification of the scores from respondents was grouped in two categories. Thus, a score of three and above would constitute a risk factor for depression; while a score below three means that there is no risk of depression.

The sample for participants among the clients (pregnant and delivered women) was 140. Taking into consideration the research study done by Mwape et al (2010)[38] which reported 48% depression in antenatal women and 37% in postnatal women we decided to recruit 80 women in antenatal and 60 women in postnatal. In the same vein, the study sampled eight (8) of the care providers representing 10% of the total staff working in Kavu health Centre.

8.2. Data Handling and Analysis

Data were initially electronically cleaned by checking for correct entries and missing values before being entered on the spreadsheet using the enter data program in EpiInfo version 7.2. The analysis involved three stages.

The first stage was univariate analysis where counts, proportions, percentiles and measures of central tendency were obtained.

The second stage was bivariate analysis where the chi-square was used to measure associations between our variables of interest (between the Edinburgh Postnatal Depression Scale (EPDS) and the Risk Factors Assessment (RFA).

The third stage analysis involved unconditional logistic regression where confounders were ruled out and risk factors independently associated with outcome variables of the Edinburgh Postnatal Depression Scale (EPDS) were observed.

Any p-value of less than five percent was taken to be statistically significant.

We did not run a student's t-test due to the fact that our continuous variables had been already sub-categorized and pre-coded during the questionnaire construction.

9. PRESENTATION OF FINDINGS

This study gathered quantitative augmented by qualitative data, which sought to investigate factors associated with the feasibility and acceptability of applying mental health screening tools in antenatal and postnatal programs.

This section presents the findings in two main large parts: initially quantitative followed by qualitative findings; proceeded by the discussion section.

Three stages were followed in the analysis of results:

- First stage was univariate analysis where counts, proportions, percentiles and measures of central tendency were obtained.
- The second stage was bivariate analysis where the chi-square was used to measure associations between our variables of interest between the Edinburgh Postnatal Depression Scale (EPDS) and the Risk Factors Assessment (RFA).
- Third stage analysis involved unconditional logistic regression where confounders were ruled out and risk factors independently associated with outcome variables of the Edinburgh Postnatal Depression Scale (EPDS) were observed.

Any p-value of less than five percent was taken to be statistically significant.

We did not run a student's t-test due to the fact that our continuous variables had been already sub-categorized and pre-coded during the questionnaire construction.

9.1. Social Demographic Data

The study comprised 140 consenting female respondents with most 51 (36.4%) living in medium density area, 48 (34.3%) high density, 28 (20.0%) low density and minority 13(9.3%) non-urban areas. The age range of all respondents is summarized in table1.

Table 1: Age Range

Age in Years	Freq	Percent
12 -17	8	5.71
18 – 23	59	42.14
24 – 29	47	33.57
30 – 35	18	12.86
36+	8	5.71

The majority 59 (42.1%) fell between the age range of 18 to 23 years. The most elderly group of 8 (5.7%) were in the range of 36 years and above in comparison to the youngest group of 8 (5.7%) aged between 12 to 17 years.

Table 2: Nationality

Nationality	Freq	Percent
Zambia	132	94.3
Zimbabwe	4	2.8
Malawi	3	2.1
Angola	1	0.8
TOTAL	140	100

Of the 140 respondents the majority 132 (94.3%) were Zambian with the minority comprising of the following nationalities; Angola, Malawi and Zimbabwe as in table two above.

Gravidity:

When it came to gravidity, the majority 83 (59.3%) had experienced between one to three (13) pregnancies, followed by 46 (32.9%) who had experienced between four to six (4-6) pregnancies. 11 had experienced seven or more pregnancies.

Parity:

As for parity (parity zero means first pregnancy not yet delivered and parity 3 means fourth pregnancy with 3 previous deliveries), the majority 122 (87.1%) had between zero and three deliveries, 13 (9.3%) having between four and six deliveries, while only five 5 (3.6%) had seven or more deliveries.

Education:

Concerning the education of the respondents, 84 (60.0%) had primary level of education, 41 (29.3%) secondary, 4 (2.9%) tertiary, with 11 (7.8%) having no education experience.

Employment:

On employment status the majority 82 (58.6%) were not employed and were housewives.

Only 22 (15.7%) were employed in formal organizations and 13 (9.3%) self-employed.

9 (6.4%) were students at secondary level and 14(10.0%) were unemployed.

Table 3: Number of People Sleeping in the House Most Nights

Range	Freq	Percent
1-3	16	11.4
4-6	46	32.9
7-9	42	30.0
10+	36	25.7
TOTAL	140	100

In terms of accommodation, 86 (61.4%) lived in houses with one to two bedrooms, 54 (38.6%) had three to five bedrooms.

On people who had slept in their respective houses on most nights, the majority 36 (25.8%) indicated four to six people. The minority 16 (11.4%) indicated one to three people who had slept in their houses on most nights as in table three.

9.2. Association between the Edinburgh Postnatal Depression Scale (EPDS) and the Risk Factors Assessment (RFA) (Bivariate analysis)

The Edinburgh Postnatal Depression Scale (EPDS) was cross-tabulated versus the Risk Factors Assessment (RFA) to observe the associations that would emerge between respective set of variables.

For only two (2) Edinburgh Postnatal Depression Scale (EPDS), number eight (8) "I have felt sad and miserable" and number nine (9) " I have been so unhappy that I have been crying", no association was found with the all 11 risk factors. The P-value was more than 5%. These non-significant outcomes and other significant outcomes (with less the P-value less than 5%) are summarized in table 4 and they are narrated below table4. The degree of freedom is 3 for all outcomes.

Table4.

Terms		D.F	p-value
EPDS N°	RFA N°		
1. Having been able to see the funny side of things	1. I feel pleased about being pregnant/having had a baby.	3	0.048
	3. My husband/boyfriend and I are still together	3	<0.001
	4. My husband/boyfriend cares about me	3	0,005
	8. My family and friends help me in practical ways.	3	0,019
2. Having looked forward with enjoyment to things	1. I feel pleased about being pregnant/having had a baby.	3	0,017
	3. My husband/boyfriend and I are still together	3	<0.001

	4. I feel my husband/boyfriend cares about me	3	0,004
	5. My husband/boyfriend or someone else in the household is sometimes violent towards me	3	0,002
	8. My family and friends help me in practical ways.	3	0,046
3. Having blamed myself when things went wrong, and it wasn't my fault	2. I have had some very difficult things happen to me in the last year (e.g. losing someone close to me, losing my job, leaving home etc.)	3	<0.001
	5. My husband/boyfriend or someone else in the household is sometimes violent towards me	3	0,018
	7. I have experienced some kind of abuse in the past year (e.g. Physical, emotional, sexual, rape)	3	0,034
4. Having been worried and I don't know why	2. I have had some very difficult things happen to me in the last year (e.g. losing	3	<0.001
	someone close to me, losing my job, leaving home etc.		
	5. My husband/boyfriend or someone else in the household is sometimes violent towards me	3	0.034
	7. I have experienced some kind of abuse in the past (e.g. Physical, emotional, sexual, rape)	3	<0.001
5. Having felt scared or panicky	10. I have experienced one of the following in the past: miscarriage, abortion, stillbirth, or the death of a child any time after birth	3	0.003
6. Having had difficulty in coping with things	10.I have experienced one of the following in the past: miscarriage, abortion, stillbirth, or the death of a child any time after birth	3	0.004
	11.I have had serious depression, panic attacks or problems with anxiety before	3	0.006

7.Having been so unhappy that I had difficulty sleeping	2. I have had some very difficult things happen to me in the last year (e.g. losing someone close to me, losing my job, leaving home etc.	3	0.045
8.Having felt sad and miserable	• RFA 1: I feel pleased about being pregnant/having had a baby	3	0.4639
	• RAF 2: I have had some very difficult things happen to me in the last year (e.g. losing someone close to me, losing my job, leaving home etc.	3	0.5481
	• RFA 3: My husband/boyfriend and I are still together	3	0.5301
	• RFA4: My husband/boyfriend cares about me	3	0.9720
	• RFA 5: My husband/boyfriend or someone else in the household is sometimes violent towards me	3	0.3625
	• RAF 6.My family and friends care about how I feel	3	0.1707
	• RFA 7: I have experienced some kind of abuse in the past year (e.g. Physical, emotional, sexual, rape)	3	0.5172
	• RFA 8: My family and friends help me in practical ways	3	0.4939

	• RAF 9.On the whole, I have agood relationship with my mother. (Indicate “no” if your mother has passed away)	3	0.1531
	• RAF 10.I have experienced one of the following in the past: miscarriage, abortion, stillbirth, or the death of a child any time after birth	3	0.1311
	• RFA11: I have had serious depression, panic attacks or problems with anxiety before.	3	0.1317
9. Having been so unhappy so that I have been crying	• RFA 1: I feel pleased about being pregnant/having had a baby	3	0.4546
	• RAF 2: I have had some very difficult things happen to me in the last year (e.g. losing someone close to me, losing my job, leaving home etc.	3	0.1875
	• RFA 3: My husband/boyfriend and I are still together	3	0.0534
	• RFA4: My husband/boyfriend cares about me	3	0.0797
	• RFA 5: My husband/boyfriend or someone else in the household is sometimes violent towards me	3	0.1188

	• RAF 6.My family and friends care about how I feel	3	0.6000
	• RFA 7: I have experienced some kind of abuse in the past year (e.g. Physical, emotional, sexual, rape)	3	0.2690
	• RFA 8: My family and friends help me in practical ways	3	0.7181
	• RAF 9.On the whole, I have agood relationship with my mother. (Indicate "no" if your mother has passed away)	3	0.9693
	• RAF 10.I have experienced one of the following in the past: miscarriage, abortion, stillbirth, or the death of a child any time after birth	3	0.0596
	• RFA11: I have had serious depression, panic attacks or problems with anxiety before.	3	0.5689
10.Having thought of harming myself or ending my life	10.I have experienced one of the following in the past: miscarriage, abortion, stillbirth, or the death of a child any time after birth	3	0.016

There was an association between EPDS 1: I have been able to see the funny side of things and:

- RFA 1: I feel pleased about being pregnant/having had a baby(P-value:0.048)
- RFA 3: My husband/boyfriend and I are still together (P-value: <0.001)
- RFA4: My husband/boyfriend cares about me (P-value: 0,005)
- RFA8: My family and friends help me in practical ways (P-value: 0,019)

There was an association between EPDS 2: I have looked forward with enjoyment to things and:

- RFA 1: I feel pleased about being pregnant/having had a baby(P-value:0.017)
- RFA 3: My husband/boyfriend and I are still together (P-value: <0.001)
- RFA4: My husband/boyfriend cares about me (P-value: 0,004)
- RFA: My husband/boyfriend or someone else in the household is sometimes violent towards me (P-value: 0,002)
- RFA8: My family and friends help me in practical ways (P-value: 0,046)

There was an association between EPDS 3: I have blamed myself when things went wrong and it wasn't my fault and:

- RFA 2: I have had some very difficult things happen to me in the last year (e.g. losing someone close to me, losing my job, leaving home etc. (P-value: <0.001)
- RFA 5: My husband/boyfriend or someone else in the household is sometimes violent towards me (P-value: 0.018)
- RFA 7: I have experienced some kind of abuse in the past year (e.g. Physical, emotional, sexual, rape) (P-value: 0.034)

A very strong association was noted between EPDS 4: I have been worried and I don't know why and:

- RFA2: I have had some very difficult things happen to me in the last year (e.g. losing someone close to me, losing my job, leaving home etc. (P-value: <0.001)

- RFA5: My husband/boyfriend or someone else in the household is sometimes violent towards me (P-value: 0.034)
- RFA7: I have experienced some kind of abuse in the past (e.g. Physical, emotional, sexual, rape) (P-value: <0.001)

There was an association between EPDS 5: I have felt scared or panicky and I don't know why) and:

- RFA2: I have had some very difficult things happen to me in the last year (e.g. losing someone close to me, losing my job, leaving home etc. (P-value: <0.001)
- RFA10: I have experienced one of the following in the past: miscarriage, abortion, stillbirth, or the death of a child any time after birth (P-value: 0.003)

There was an association between EPDS 6: I have had difficulty in coping with things and:

- RFA10: I have experienced one of the following in the past: miscarriage, abortion, stillbirth, or the death of a child any time after birth (P-value: 0.004)
- RFA11: I have had serious depression, panic attacks or problems with anxiety before. (P-value: 0.006)

There was an association between EPDS7: I have been so unhappy that I have had difficulty sleeping and:

- RFA2: I have had some very difficult things happen to me in the last year (e.g. losing someone close to me, losing my job, leaving home etc. (P-value: 0.045)

There was an association between EPDS 10: Having thought of harming myself or ending my life an:

- RFA10: I have experienced one of the following in the past: miscarriage, abortion, stillbirth, or the death of a child any time after birth (P-value: 0.016)

There was no association found between two (2) EPDS, EPDS8 “I have felt sad and miserable” and EPDS9 “I have been so unhappy that I have been crying.” and all 11 RFA

9.3. Unconditional logistic regression

Calculated unconditional logistic regression was calculated to rule out confounders and came up with factors from the Risk Factors Assessment (RFA) independently associated with outcomes from the Edinburgh Postnatal Depression Scale (EPDS). The results are narrated bellow:

- Women who stated that they had been able to see the funny side of things were five times more likely (P=0.039) to be with families and friends who helped them in practical ways than those who had not been able to see the funny side of things.

- Women who stated that they had looked forward with enjoyment to things were nine times more likely (P-Value=0.027) to feel pleased about being pregnant/having had a baby than those who had not looked forward with enjoyment to things.
- The women who stated that they had looked forward with enjoyment to things were four times more likely (P-Value=0, 014) to be in good relationship with family and friends than those who had not looked forward with enjoyment to things.

- Women who stated that they had blamed themselves when things went wrong and it wasn't their faults were three times more likely (P-Value=0,027)to feel that their husbands/boyfriends did not care about them than those who did not blame themselves when things went wrong.

- Women who stated that they had blamed themselves when things went wrong and it wasn't their faults were five times more likely (P-Value=0,009)to feel that their families and friends did not help them in practical ways than those who did not blame themselves when things went wrong.

- Women who stated that they had been worried and didn't know why were five times more likely (P-value=0,009) to feel that their families and friends did not help them in practical ways than those who had not been worried

- Women who stated that they had had felt scared or panicky and they didn't know why were five times more (P-Value=0,016) likely to feel that their husband/ boyfriend did not care about them than those who did not feel panicky and didn't know why.

- Women who stated that they had had felt scared or panicky and they didn't know why were two times more (P-Value=0,026) likely to be in bad relationship with their mothers than those (or their mothers had passed away) than those who had not felt scared and panicky.

- Women who stated that they had difficulty in coping with things were two times more likely (P-Value=0,047) to be in bad relationship with their mothers (or their mothers had passed away) than those who had no difficulty in coping with things

- Women who stated that they had been so unhappy and had difficulties to sleep were 3 times more likely(P-Value=0,006) to be in bad relationship with their mothers (or their mothers had passed away) compared to those whose mothers were alive and had good relationship with them

- Women who had stated that they had been so unhappy that they had been crying were four times more likely(P-Value=0,013) to be no more in relationship with their husband/boyfriend compared to those who had not been unhappy and had not been crying.
- Women who had stated that they had been so unhappy that they had been crying were five times more likely (P-Value=0,019) to have experienced one of the following in the past: miscarriage, abortion, stillbirth, or the death of a child any time after birth compared to those who had not been unhappy and had not been crying.

9.4. Risk Factors Assessment (RFA) screening results

Risk Factors Assessment Tool showed that 52 of 140 respondents were at risk of developing maternal depression. (37%)

See Table 6 below **Table6.**

RFA SCORES INTERVALS	TOTAL SCORES PER INTERVAL	PERCENTAGE
0 TO 2	88	63%
ABOVE 2	52	37%
TOTAL	140	100%

The majority (63%) of the respondents have no risk of developing maternal depression, while 37% are at risk of developing maternal depression.

9.5. The Edinburgh Postnatal Depression Scale (EPDS) Screening Results

When summarized, the Edinburgh Postnatal Depression Scale (EPDS) showed that fifty nine out of 140 respondents had no depression, forty four had mild depression, thirty one had moderate depression and six severe depression, and the cut-off points were as per the following range of scores in table seven:

Table7:

No	Range	Diagnosis	Freq	Percent
1	0 to 7	No Depression	59	42,14
2	7 to 10	Mild Depression	44	31,43
3	11 to 14	Moderate Depression	31	22,14
4	14+	Severe Depression	6	4,29

The majority 42.14% (59) of all respondents have no depression.

31.43% (44) suffer from mild depression and 22.14% (31) suffer from moderate depression. The minority 4.29% (6) suffer from severe depression.

9.6. Antenatal and postnatal Edinburgh Postnatal Depression Scale (EPDS) Scores

Considering the antenatal period (80 respondents) and postnatal period (60 respondents) periods, the EPDS showed that 42.5% in antenatal and 28.3% in postnatal were suffering from maternal depression respectively. (See Tables 8 and 9)

Table 8. Antenatal EPDS Scores

0 TO 10	46	57.5%
ABOVE 10	34	42.5%
TOTAL	80	100%

Of the 80 respondents registered in antenatal program 46 (57, 5%) have no depression, while 34 (42.5%) suffer from depression.

Table 9. Postnatal EPDS score

0 TO 10	43	71.7%
ABOVE 10	17	28.3%
TOTAL	60	100%

Of the 60 respondents registered in postnatal program, 43 (71.7%) have minimal risk of developing depression, while 17 (28, 5%) are at risk of developing depression.

9.7.Antenatal and postnatal Risk Factors Assessment (RFA) Scores

The RFA showed that 40% in antenatal and 33.3% in postnatal women were at risk of developing depression, as in tables 10 and 11.

Table 10. Antenatal RFA Scores

ANTENATAL RFA SCORES	TOTAL SCORES PER INTERVAL	PERCENTAGE
0 TO 2	48	60%
ABOVE 2	32	40%
TOTAL	80	100%

32 (40%) out of the 80 respondents are at risk of developing depression.
There is minimal risk of developing depression for 48 respondents (60%) out of the total number of 80 respondents registered in antenatal programs.

Table 11. Postnatal RFA Scores

POSTNATAL RFA SCORES	TOTAL SCORES PER INTERVAL	PERCENTAGE
0 TO 2	40	66.7%
ABOVE 2	20	33.3%
TOTAL	60	100%

20 (33.3%) out of the 60 respondents are at risk of developing depression.

There is minimal risk of developing depression for 40 respondents (66.7%) out of the total number of 60 respondents registered in postnatal programs.

9.8. Health Care Providers' Opinions

Concerning the acceptability and the feasibility of the introduction of screening tools in antenatal and postnatal programs by eight care providers (10% of the total number of the personnel), were trained on how to use the screening tools. After one month, the eight trained care providers were interviewed and they expressed their satisfaction regarding the use of the screening tools. Their narration clearly pointed to the urgency of implementing the mental health screening tools in antenatal and postnatal programs at primary level in Zambia. (See table12.)

TABLE 12. QUESTIONS AND ANSWERS FROM CARE PROVIDERS:

ID	Q1	Q2	Q3	Q4	Q5	Q6
1	4	2	5	2	5	2
2	5	4	5	4	4	4
3	4	4	5	4	4	4
4	4	4	4	4	4	4
5	4	4	4	4	5	3
6	4	2	5	5	5	4
7	5	4	4	4	4	5
8	5	4	4	5	5	5

	1	2	3	4	5	TOTAL
Q1	0	0	0	5	3	8
Q2	0	2	0	6	0	8
Q3	0	0	0	4	4	8
Q4	0	1	0	5	2	8
Q5	0	0	0	4	4	8
Q6	0	1	1	4	2	8

QUESTIONS:

Q1: I have no difficulties to use the screening tools

Q2: The workload is same as before the introduction of screening tools

Q3: The mental health screening will improve the well-being of service users

Q4: I feel more satisfied in my work after the introduction of screening tools

Q5: Mental health screening tools should be introduced in all primary care settings Q6: I find 20 minutes for screening too long

ANSWERS:

1. I totally disagree
2. I somehow agree
3. No opinion
4. I agree
5. I totally agree

With regard to Question Number 1 (I have no difficulties to use the screening tools) the responses were:

- I agree (Answer Number 4) for five (62.5%) out of the eight (8) respondents.
- I totally agree (Answer Number 5) for three (37.5%) out of the eight (8) respondents

None of the respondents answered with "I totally disagree" (Answer Number 1), "I somehow agree" (Answer Number 2) or "No opinion" (Answer Number 3).

With regard to Question Number 2 (The workload is same as before the introduction of screening tools) the responses were:

- I agree (Answer Number 4) for six (75%) out of the eight (8) respondents
- I somehow agree (Answer Number 2) for two (25%) out of the eight (8) respondents

With regard to Question Number 3 (The mental health screening will improve the well-being of service users) the responses were:

- I agree (Answer Number 4) for four (50%) out of the eight (8) respondents
- I totally agree (Answer Number 5) for four (50%) out of the eight (8) respondents

None of the respondents answered "I totally disagree" (Answer Number 1), "I somehow agree" (Answer Number 2) or "No opinion" (Answer Number 3).

With regard to Question Number 4 (I feel more satisfied in my work after the introduction of screening tools) the responses were:

- I agree (Answer Number 4) for five (62.5%) of the eight respondents

- I totally agree (Answer Number 5) for two (25%) of the eight respondents
- I somehow agree (Answer Number 2) for one (12.5%) of the eight respondents

With regard to Question Number 5 (Mental health screening tools should be introduced in all primary care settings) the responses were:

- I agree (Answer Number 4) for four (50%) out of the eight (8) respondents
- I totally agree (Answer Number 5) for four (50%) out of the eight (8) respondents

None of the respondents answered "I totally disagree" (Answer Number 1), "I somehow agree" (Answer Number 2) or "No opinion" (Answer Number 3).

With regard to Question Number 6 (I find 20 minutes for screening too long) the responses were:

- I somehow agree (Answer Number 2) for one (12.5%) out of the eight (8) respondents
- No opinion (Answer Number 3) for one (12.5%) out of the eight (8) respondents
- I agree (Answer Number 4) for four (50%) out of the eight (8) respondents
- I totally agree (Answer Number 5) for two (25%) out of the eight (8) respondents

10. DISCUSSION

In order to investigate factors associated with feasibility and acceptability of applying mental health screening tools in antenatal and postnatal programs at Kavu Health Centre, Ndola, Zambia, this study had to investigate the association between maternal depression with the sociodemographic data, the risk factors, the outcomes of the Edinburgh Postnatal Depression Scale (EPDS) and the Risk Factors Assessment (RFA, and the feasibility and acceptability of mental screening tools in antenatal (AN) and postnatal (PN) programs.

Socio-demographic Data

The respondents provided information on socio-demographic data covering: age, expected date of delivery, gravidity, parity, residence, number of bedrooms of their houses, number of people sleeping in their houses on most nights, employment status and educational level. The association of the Edinburgh Postnatal Depression Scale (EPDS) and the socio-demographic data showed that:

- Women who blamed themselves when it wasn't their fault, were more likely to belong to the group of those who did not have any favorable educational background and came from houses which had only two bedrooms and below, where ten people and above were sleeping on most nights (p-value: 0.024).

- Women who stated having been so unhappy that they had been crying were more likely to sleep in a house with maximum two bedrooms and where ten people and above were sleeping on the most nights. (P-value: 0.014)

To this effect, we have a challenge of poverty versus mental health in child bearing women. As stipulated in the chapter "Literature Review" of this study, on page 15, these findings on the sociodemographic data corroborate with other studies which confirmed that poverty does influence the mental health[22, 58].

Associated Risk Factors

Women who felt scared or panicky and didn't know the reason why were more likely to be unemployed (P-Value: 0.025), and more likely to have had 7 deliveries and above (P-Value: 0.038). This association may as well be linked to the anxiety of not knowing what to do with so many children, in terms of feeding, clothing and schooling.

It can be anticipated that women in the younger child bearing age group would feel miserable and were more likely to belong the age group 12-17 or 36 and above (P-value: 0.048).

The fact that maternal depression is associated with high parity confirms what Cyimana reported in 2010: “In the model, the EPDS score was independently significantly associated with parity 4 or 5.”[14]

Administration of the Edinburgh Postnatal Depression Scale (EPDS) and the Risk Factors Assessment (RFA)

The Edinburgh Postnatal Depression Scale (EPDS) has three pages and takes an average of 10 minutes on self-administration and less than seven minutes when administered with help from care providers. The most commonly used language was Bemba.

Similarly the Risk Factors Assessment has 2 pages and takes an average of six minutes on self-administration and less than four minutes when administered with help from care providers. The mostly used language was Bemba.

It was argued that the introduction of mental health screening tools such as Edinburgh Postnatal Depression Scale (EPDS) and Risk Factors Assessment (RFA) in antenatal (AN) and postnatal (PN) programs could definitely improve the mental health of pregnant women as it has been demonstrated in some countries like South Africa and Nigeria.

To this effect, the results of this study are in affirmative with this earlier plausible argument.

Outcomes of Edinburgh Postnatal Depression Scale (EPDS) and Risk Factors Assessment (RFA)

The third objective of this study was to establish the outcome of the screening tools, the Edinburgh Postnatal Depression Scale (EPDS) and Risk Factors Assessment (RFA) results among women attending antenatal (AN) and postnatal (PN) programs at Kavu Health Centre in Ndola
The Edinburgh Postnatal Depression Scale (EPDS) showed a high prevalence of depression in women attending antenatal (AN) and postnal (PN) programs at KHC in Ndola: Only fifty nine out of 140 respondents had no depression, forty-four had mild depression, thirty one had moderate depression and six (6) had severe depression. The Risk Factors Assessment (RFA) showed that 52(37%) of the 140 respondents, were at risk of developing maternal depression. Considering the

antenatal (80 respondents) and postnatal (60 respondents) periods, the Edinburgh Postnatal Depression Scale (EPDS) showed that 42.5% in antenatal and 28.3% in postnatal were suffering from maternal depression respectively.

There were differences between our study results and the results from the study conducted in Zambia by Mwape et. al[38] in 2010 which reported depression with a prevalence of 48% in antenatal (AN) and 37% in postnatal (PN) periods. The reason of the decrease of the prevalence of depression (42.5% instead of 48% and 28.3% instead of 37%) cannot be confirmed. The low prevalence may be due to the fact that the study was conducted in a rural area. At the same time we cannot totally rule out other factors such as continued improvements in the maternal and child health programmes by the government.

Feasibility and acceptability of administering screening tools

The last objective was to find out the feasibility and acceptability of applying mental health screening tools from the health care workers at Kavu Health Centre in Ndola.

Eight (8) care providers representing 10% of the total number of the personnel were trained in how to use the screening tools. After one month, the eight trained care providers were interviewed and they expressed their satisfaction regarding the use of the screening tools. They unanimously expressed their will to have the mental health screening tools implemented in antenatal and postnatal programs as soon as possible.

These findings are encouraging and pose a challenge to policy makers, who should have implemented such interventions a decade ago. These findings confirm the results from other studies conducted in Zambia by Mwape et al. in 2010, 2011 and 2012.[35,36,38]

11. STUDY STRENGTHS AND LIMITATIONS

11.1. Study strength

One of the strengths of this study is that the topic it addresses is novel for Zambia and establishes a basis for the further study on the implementation of mental health at primary health care level.

Another strength of the study is the use of a widely validated, internationally accepted measurement tools, the Edinburgh Postnatal Depression Scale and The Risk Factors Assessment (RFA).

Women who were considered "moderately and severely" depressed in this study were counselled and proposed to see the mental health specialist at the psychiatric unit, but all of them refused, and it was taken to be their autonomous right to exercise.

11.2. Study Limitations

There were several limitations to this study. By recruiting our patients from a rural area the study may not be representative of the wider population of mothers. It is not known if the prevalence of depression could be the same in the urban areas. Thus, caution is exercised here as no overgeneralizations are intended when considering the prevalence of maternal depression in women attending antenatal and postnatal programs at Kavu Health Centre.

This study displays the extent of maternal depression among the pregnant and delivered women at Kavu Health Centre and the outcomes cannot be over-generalized to the whole population of Zambia.

Other risk factors like the marital status of the respondents, family history of depression, history of addiction to tobacco, alcohol were not considered. We think that this was a limitation to this study.

The other important limitation was the inability of the study to isolate or confirm depression by referring the respondents with moderate and severe symptoms for a formal mental state examination in a psychiatric unit.

12. CONCLUSIONS AND RECOMENDATIONS

This chapter is presented in two parts: the first part highlights concluding remarks drawn from the study and the second part gives recommendations based on the findings of the study.

The findings in this study are specific to Kavu Health Centre. However, these findings are likely to be applicable to other primary care settings in Zambia, especially those in rural areas.

12.1. Conclusions

In conclusion, this study has demonstrated that it is feasible and acceptable to administer the Edinburgh Postnatal Depression Scale (EPDS) and Risk Factors Assessment (RFA) among women attending antenatal (AN) and postnatal (PN) programs. The administration of the Edinburgh Postnatal Depression Scale (EPDS) and Risk Factors Assessment (RFA) detected a high prevalence of depression in 43.5% of women attending antenatal (AN) and 28.3% of women attending postnatal (PN) programs.

All care providers unanimously recommended that the mental health component should be assessed in the antenatal and postnatal programs. The training of the care providers on how to detect maternal depression symptoms and on how to help depressed women attending antenatal (AN) and postnatal (PN) programs is a must if we want to improve the well-being of pregnant and delivered women.

12.2. Recommendations

1. As the study has been conducted in the rural area, we strongly recommend similar studies to be conducted in the urban areas to see if the prevalence of maternal depression is the same in the urban and rural areas. Thus further research is needed to better characterize maternal depression in the different populations in Zambia.
2. Policy makers should implement the inclusion of mental health screening in the antenatal and postnal programs as soon as possible.
3. Screening for maternal depression must be a part of the assessment at the first and last antenatal visits and the first postnatal visit in order to counsel and assist the mothers.
4. The Ministry of Health should develop a programme to create awareness of maternal depression and put in place policies which will help in screening, and subsequent management of maternal depression.
5. Health care providers working in antenatal and postnatal programs should be trained on how to detect maternal depression symptoms and how to counsel the depressed mothers.

This study was ethically approved by ERES Converge, the Institutional Research Board, 23 Joseph Mwilwa Road, Rhodes Park Lusaka Zambia and the Ethics Committee of Nova Medical School, Lisbon Portugal. Permission was sought from the Managing Director of the Kavu Health Centre. Written informed consent was obtained from study participants before they took part in the study.

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14. APPENDICES

Appendix 1. The Edinburgh Postnatal Depression Scale (EPDS)

The EPDS is a set of questions used to assess whether or not a woman may be suffering from depression or anxiety, or both. It can be used antenatally and postnatally. It is one of the most widely accepted tools in the world. It has been validated through research in many different cultures and countries.

The Edinburgh Postnatal Depression Scale

My feelings now that I am pregnant or have had a baby.

As you are pregnant or have had a baby, we would like to know how you are feeling. It may help us in choosing the best care for your needs. The information you provide us will be kept private and confidential.

There is a choice of four answers for each question. Please circle the one that comes closest to how you have felt in the past seven days, not just how you feel today.

[SCORES ON RIGHT HAND SIDE]

In the past seven days:

- I have been able to see the funny side of things:

As much as I always could	[0]
Not quite so much now	[1]
Definitely not so much now	[2]
Not at all	[3]

- I have looked forward with enjoyment to things:

As much as I ever did	[0]
A little less than I used to	[1]
Much less than I used to	[2]
Hardly at all	[3]

- I have blamed myself when things went wrong, and it wasn't my fault:

Yes, most of the time	[3]
Yes, some of the time	[2]
Not very much	[1]
No, never	[0]

- I have been worried and I don't know why:

No, not at all	[0]
Hardly ever	[1]
Yes, sometimes	[2]

Yes, very much [3]

5. I have felt scared or panicky and I don't know why:

Yes, quite a lot [3]
Yes, sometimes [2]
No, not much [1]
No, not at all [0]

6. I have had difficulty in coping with things:

Yes, most of the time I haven't been managing at all [3]
Yes, sometimes I haven't been managing as well as usual [2]
No, most of the time I have managed quite well [1]
No, I have been managing as well as ever [0]

7. I have been so unhappy that I have had difficulty sleeping:

Yes, most of the time [3]
Yes, sometimes [2]
Not very much [1]
No, not at all [0]

8. I have felt sad and miserable:

Yes, most of the time [3]
Yes, quite a lot [2]
Not very much [1]
No, not at all [0]

9. I have been so unhappy that I have been crying:

[3]
Yes, most of the time

Yes, quite a lot [2]
Only sometimes [1]
No, never [0]

10. I have thought of harming myself or ending my life:

Yes, quite a lot	[3]
Sometimes	[2]
Hardly ever	[1]
Never	[0]

Step 1: Ask the mother the questions or leave her to complete the questionnaire on her own

Make sure that she has ticked all the questions. The EPDS questionnaire is made up of ten multiple-choice questions. These questions ask the mother about how she has felt in the last seven days. Each question has four possible answers. These answers are given score values, from 0 to 3. The scores indicate how strongly the mother was feeling about something. A higher score indicates a more serious symptom.

Step 2: Some questions might require double-checking

Question 7: 'I have been so unhappy I have had difficulty sleeping.'

Check if the mother is having difficulty sleeping because of her feelings, or because of being physically uncomfortable due to the pregnancy.

Question 10: 'I have thought of harming myself or ending my life.'

If the mother gives an answer with a score of 1, 2 or 3 on this question, you must ask her further questions to determine if she is suicidal.

Step 3: Scoring

After the client has completed the questionnaire, score her answers. The example of the EPDS given on the previous two pages includes scores. Note how the ordering of highest or lowest score is not the same for each question. Add up each of the scores the mother got for the ten questions. The TOTAL score is important.

Step 4: Add up the scores.

If TOTAL score is:

Below 10

= the mother is probably fine and does not need to be referred

Above 10 = she is at risk of depression and anxiety and may need to be referred

13 and above = the women needs to be referred

If the mother has previously attempted suicide, or has a thought-out plan for how she may harm herself, you need to refer her URGENTLY. It does not matter what her overall score is.

Appendix2. The Risk Factor Assessment (RFA)

While the EPDS screens for symptoms of maternal mental illness, this questionnaire assesses the risk factors for mental illness.

The Risk Factor Assessment (RFA)

My situation now that I am pregnant/have had a baby.

We are interested to find out how your situation is in your pregnancy/now that you have had your baby. This questionnaire may help us suggest extra care for you if necessary. Your answers will be kept confidential. Please answer either yes or no to the following questions. Tick the box.

Question	Yes	No
1. I feel pleased about being pregnant/having had a baby.	Yes	No
2. I have had some very difficult things happen to me in : w<the last year (e.g. losing someone close to me, losing my job, leaving home etc.)	Yes	No
3. My husband/boyfriend and I are still together.	Yes	No
4. I feel my husband/boyfriend cares about me (say 'no' if you are not with him anymore).	Yes	No
5. My husband/boyfriend or someone else in the household is sometimes violent towards me.	Yes	No
6. My family and friends care about how I feel.	Yes	No
7. I have experienced some kind of abuse in the past (e.g. Physical, emotional, sexual, rape).	Yes	No
8. My family and friends help me in practical ways.	Yes	No
9. On the whole, I have a good relationship with my own mother (indicate 'no' if your mother has passed away).	Yes	No
10. I have experienced one of the following in the past: miscarriage, abortion, stillbirth, or the death of a child any time after birth.	Yes	No

11. I have had serious depression, panic attacks or problems with anxiety before.	Yes	No

Step 1: Ask the mother the questions or leave her to complete it on her own. Make sure that she has ticked all the questions.

Step 2: Scoring

Questions 1, 3, 4, 6, 8 and 9

NO answers to these questions indicate the woman is at risk give a score of 1 for each of these questions if the answer is NO, and YES answers to these questions indicate low risk give a score of 0 for each of these questions if the answer is 'yes'.

Questions 2, 5, 7, 10 and 11

YES answers to these questions indicate the woman is at risk give a score of 1 for each of these questions if the answer is YES. NO answers to these questions indicate low risk. Give a score of 0 for each of these questions if the answer is NO

Question	Yes	No
1	0	1
2	1	0
3	0	1
4	0	1
5	1	0
6	0	1
7	1	0
8	0	1
9	0	1
10	1	0
11	1	0

Step 3: Add up the scores

Based on the scoring instructions, add up the scores. Use the table to the left as a guide by counting the answers in the shaded areas. If a woman's total score is 3 or above she needs to be referred to a counsellor.

Because this assessment identifies serious risk factors, a referral is needed with a score of 3 or above, no matter what the mother's EPDS score is.

Appendix3. Care providers' questionnaire

As you have been trained on how to use the 2 screening tools and have been screening pregnant women for 2 months, we would like to know what you think about the 2 instruments. What is your experience now compared with your work before the introduction of the mental health screening. It may help us in choosing the best care for the needs of the pregnant women attending the antenatal and the postnatal programs. The information you provide us will be kept private and confidential.

There is a choice of five answers for each question. Please circle the one that comes closest to how you have been experiencing the introduction of the mental health screening tools.

1. After the training I had no difficulties to use screening tools
   a) I totally disagree
   b) I somehow agree
   c) No opinion
   d) I agree
   e) I totally agree

2. After the introduction of screening tools in my day to day work, I don't see any difference regarding my workload before the introduction of screening tools
   a) I totally disagree
   b) I somehow agree
   c) No opinion
   d) I agree
   e) I totally agree

3. The introduction of mental health screening in antenatal and postnatal programs will improve the well-being of the service users.

a) I totally disagree
b) I somehow agree

c) No opinion

d) I agree

e) I totally agree

4. Since the introduction of mental health screening tools in my work I feel more satisfied by my work.

a) I totally disagree

b) I somehow agree

c) No opinion

d) I agree

e) I totally agree

5. The mental health screening should be introduced in all primary care settings.

a) I totally disagree

b) I somehow agree

c) No opinion

d) I agree

e) I totally agree

6. I find the 20 minutes allocated to mental screening tools in our routine history taking too long

a) I totally disagree

b) I somehow agree

c) No opinion

d) I agree

e) I totally agree

Appendix4. Information Sheet

My name is..... We are conducting a study looking at the factors associated with the feasibility and acceptability of mental health screening tools in antenatal and postnatal programmes at Kavu Health Centre (KHC). This study is being conducted by Mr. Alphonse Musabyimana as partial fulfillment for the award of the Master's degree in Primary Care Mental Health at the Nova Medical School, Lisbon, Portugal which he is pursing and now in his final year. The study will involve the pregnant women attending antenatal program and delivered women attending postnatal program who are willing to participate in this study. Little has been done in the area of research on the detection of maternal depression in antenatal and postnatal programmes in Zambia. The aim of this study is to determine factors associated with the feasibility and acceptability of mental screening tools by both service users and care providers in the antenatal and postnatal programmes in Kavu Health Centre. This study will give the researcher and the public in general a better understanding of this problem, and help health planners to consider this problem in their quest to deliver quality services. This is why your contribution by giving us your details and answering to the appropriate questionnaire will be very much appreciated. To be a participant to this study has no risk at all. You will benefit by having a postnatal care and information on your mental status and you will be given treatment where it is needed.

I invite you to take part in the study. I am going to ask you some question based on the questionnaire that I have. The interview will not take more than 20 minutes. Your participation will be very much appreciated and you are free to refuse participation in the study or withdraw at any stage without any prejudice to your usual medical care in this clinic. The information taken from you with regard to this study will be kept confidential as no full names but initials or numbers will be used in collection of information and analysis of the data. Your approval will be confirmed by your signature or your thumb print on the consent form. If you agree to take part in the study we may now proceed.

Appendix5. Consent Form

(To be filled in or read to each respondent in her chosen language.)

This is an important form giving you information about this study that we are conducting. Please read it or someone will read it for you, carefully, and ask questions where it is not clear for you. If you decide to participate in this study, you will confirm by signing or putting your thumb print at the indicated space. You are free to refuse the participation in this study without any risk of change or influence on your treatment and care that you will be receiving in this clinic. You are also free to withdraw from this study at any time you wish to do so and you will still receive the normal care.

PURPOSE OF RESEARCH AND PROCEDURES.

The aim of this study is to establish whether, at KHC, it is possible to introduce mental health screening in antenatal and postnatal programmes. Some mothers who have been attending this service have been admitted in psychiatric wards after delivery because they were suffering from depression. The maternal depression has short term and long term on the mother, the child, the family and the society in general. If these women had been mentally screened during their antenatal and postnatal bookings, may be this depression could have been detected early, and this admission in psychiatric ward, may be, could have been avoided. The information that you will provide us, by signing this consent form and by filling in the screening tools that you will receive, will help us to confirm that the screening tools are feasible and acceptable by this service users. The outcomes from this study will help health planners, in their quest to deliver quality services, to implement systematic mental screening in antenatal and postnatal programmes.

RISKS AND BENEFITS

To be a participant to this study has no risk at all. You will benefit by having an antenatal and postnatal care and information on your mental status and you will be given treatment where it is needed.

CONFIDENTIALITY

All the information including your initials and your mental status will be kept confidential. The all information collected on the questionnaire sheet will be destroyed after transferring the data

to the computer where initials of your names will be replaced by computer number of each participant.

For any queries on this study, you are free to contact him on 0977245294 or 0975906750 or 0965078789

E.MAIL: musabyimana2003@yahoo.fr

Thank you sincerely for your time.

I agree to take part in this study

Signature…… Witness……..…

Date……

Appendix 6. Simplified social demographic data-epds-rfa screening tool

Name (Initial)		
Surname (Initial)		
Age	12-17	
	18-23	
	24-29	
	30-35	
	≥36	
Expected Date of Delivery (EDD)		
Zambian	Yes	
	No	
Gravidity (#pregnancies)	G1-3	
	G4-6	
	≥7	
Parity (# live births)	P1-3	P4-6
	≥7	
Residential address	Low density	
	Medium density	
	High density	
	Non-urban	
# rooms for sleeping	1-2	
	3-5	
	≥6	
# people sleeping in house on most	1-3	

nights	4-6	
	7-9	
	≥10	
Employment status	Self employed	
	Employed	
	Unemployed	
	Housewife	
	Student	
Educational Level	None	
	Primary education	
	Secondary education	
	Tertiary education	

SCORES

Was this pregnancy planned?	Yes	0
	No	1
How do you feel about being pregnant?	Happy/Excited	0
	Unhappy/Sad	1
	Other	1
Are you and your husband/boyfriend still together?	Yes	0
	No	1
Do you feel as if he cares about you?	Yes	0
	No	1

Do you feel that you have family and friends that care about you?	Yes	0
	No	1
Do you have family or friends that help you in practical ways?	Yes	0
	No	1
How would you classify your relationship with your mother?	Passed away	1
	No relationship/ No contact	1
	Good relationship	0
	Bad relationship	1
Is your husband/boyfriend or someone else in household sometimes violent towards you?	Yes	1
	No	0
Have you ever experienced some kind of abuse (physical, emotional, sexual, rape)?	No	0
	Yes-Physical	1
	Yes-Emotional	1
	Yes-Sexual	1
	Yes-Rape	1
Have you experienced a miscarriage, abortion, stillbirth, or death of a child?	No	0
	Miscarriage	1
	Abortion	1
	Stillbirth	1
	Death of a child	1

	Yes	1
	No	0
Have you had some difficult things happen to you in the past year (other than a miscarriage, abortion, stillbirth, or death of a child) e.g. death of someone close to you, moving house, losing a job?		
If yes, Can you tell me a bit about it? (No scoring)	Lost someone close	0
	Lost job	0
	Moved house	0
	Sickness	0
	Divorce	0
	Infidelity	0
	Prison	0
	Other	0
Have you ever experienced serious depression, anxiety or panic attacks?	No	0
	Depression	1
	Anxiety	1
	Panic attacks	1

Total Score	1	
	2	
	3	
	4>>Refer	
	5>>Refer	
	6>>Refer	
	7>>Refer	
	8>>Refer	
	9>>Refer	
	10>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>Refer	
	11>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>Refer	
	12>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>Refer	
		SCORES
In the past 2 weeks, have on some or most days felt unable to stop worrying or thinking too much?	Yes	1
	No	0
In the past 2 weeks, have on some or most days felt down, depressed or helpless?	Yes	1
	No	0
In the last 2 weeks, have on some or most days had thoughts and plans to harm yourself or commit suicide?	Yes	1
	No	0

TOTAL SCORE	1
	2>>Refer
	3>>Refer
Offered counselling	Yes
	No
Accepted counselling	Yes
	No

Appendix7. Simplified social demographic data-EPDS-RFA screening tool (Bemba)

Date		Age	12-17 □ 18-23□ 24-29□ 30-35□ ≥36
Ishina	Initial	Gravidity(# pregnancies)	G1-3□ G4-6□ ≥7□
Ishina lya bafyashi	Initial	Parity(# abana abafyalwa abatuntulu)	P1-3□ P4-6□ ≥7□
Folder #		EDD	
Komboni Residential adress	Low density □ Medium density □	# incende yakusendamamo	
	High density□ Non-urban□		
Ubushiku wakufyalwa		Impendwa iya bantu abasendama mung'anda ubushiku ubwingi	1-3□ 4-6□ 7-9□ ≥10□

Muli bena Zambian	☐ ukusumina ☐ ukukana	Pa lwa milimo	balabomba□ tababomba□ bali pasukulu□ house wife□
Bushe ilifumo lyali mumapange?		☐ ukusumina [0] ☐	ukukana [1]
Bushe muleumfwa shani ukuti namwimita?	☐ uwansansa/uwachimwemwe [0] ☐ ushili nesansa / uwabulanda [1] ☐ fimbi..... [1]		
Bushe imwe nabalume benu/umunenu umwaune mucili pamo?	☐ ukusumina [0]	☐ ukukana [1]	
Bushe mule unfwa kuti balimisakamana?	☐ ukusumina [0]	☐ ukukana [1]	
Bushe mule unfwa ukuti mwalikwata ulupwa nefibusa abasakamana pali ifyo mumfwa?	☐ ukusumina [0]	☐ ukukana [1]	
Bushe mwalikwata balupwa ne fibusa abamyafwa munshila iya ficitwa?	☐ yes [0]	☐ No [1]	
Bushe kuti mwabika pesa uku mfwana kwenu nabanyinenwe?	☐ balifwa [1] ☐ tapaba ukunfwana/tapaba ukulanshanya [1] ☐ paliba ukumfwana ukusuma [0] ☐ paliba ukumfwana ukwabipa [1]		

Bushe abalume benu/umunenu umwaume nangula uuli onse pang'anda pamwenu balaba abalubuli kuli imwe panshita shimo?	☐ukusumina [1]	☐ukukana 0]
Bushe mwalifipitamo mukucushiwa ukulikonse (kumubili, ukufyo mumfwa, palwansuna, ukupatikishiwa insina)?	☐ ukukana [0] ☐ ukusumina – kumubili [1] ☐ ukusumina – kufya kumfwa [1] ☐ kusumina – palwansuna [1] ☐ ukusumina – ukupatishiwa insuna [1]	
Bushe mwalipitamo mukunaika mwefumo, ukufumya ifumo, ukupapa umwana uushilakosa, nangula ukufwa kwamwana?	☐ ukukana [0] ☐ ukonaika kwefumo [1] ☐ ukufumya ifumo [1] ☐ ukufyala umwana uushila kosa [1] ☐ ukufwa kwa mwana [1]	

Bushe kwalimicitikilako ifintu fimo ifya afya mumwaka ubwa pwa (ukufumyako, ukunaika kwenfumo, ukufumya ifumo,ukufyala umwana uushilakosa nangula ukufwa kwa mwana?	☐ ukusumina [1]	☐ ukukana [0]

Ngacakuti basumina kuti mwanjebako panono pa lwaichi?	☐ ukulufya umo uwali mupepi naimwe [0] ☐ ukulufya inchito [0] ☐ ukukuka [0] ☐ ukulwala [0] ☐ ukulekana [0] ☐ bacintomfwa [0] ☐ icifungo [0] ☐ Fimbi …… [0]……
Bushe mwali umfwapo ukufuila ukupwa amaka, ukwenekela, nangula ukusakamana?	☐ ukukana [0] ☐ ukupwa amaka [1] ☐ ukwenekela [1] ☐ ukusakamana [1]
Total score Amatomi yonse capamo	1 2 3 4 ……refer 5…… refer 6…… refer

	7…… refer 8……. refer 9……. refer 10…….. refer 11……. refer 12…..... refer	
Mukati kamilungu ibili iyapita nangula inshiku mwalyumfwapo ukufilwa ukuleka ukusakamana nangula ukutontokanya sana?	☐ ukusumina [1]	☐ ukukana [0]
Mukati kamilungu ibili iyapita, bushe panshiku shimo nangula ishingi, mwalyumfyapo ukuba panshi ukupwa amaka nangula ukupwilwa isubilo	☐ ukusumina [1]	☐ ukukana [0]
Mukati kamilungu ibili iyapita, panshiku shimo nangula ishingi mwalitontonkanyapo ukuicena mwebene nangula ukupwisha ubumi bwenu?	☐ ukusumina [1]	☐ ukukana [0]
Total score Amatoni yonse capamo	1…….. 2…..... Refer 3…..... Refer	

Ukupela bumpandamano	☐ ukusumina	☐ ukukana
Ukusumina bumpandamano	☐ ukusumina	☐ ukukana

Appendix8. Simplified social demographic data-EPDS-RFA screening tool (Nyanja)

Siku		Kukula kwa musinkhu	
Dzina	Initial	Ukulu kapena chiwerengero cha mimba G1-3□ G4-6□ ≥7□	
Dzina la Atate	Initial	Chiwerengero cha ana obadwa a moyo P1-3□ P4-6□ ≥7□	
Nambala ya chosungilamo		EDD	
Muzinda/Malo	Low density Medium density High density Non-urban	Chiwerengero cha zipinda zo gonamo	1-2 3-5 ≥6
Siku la kubadwa Age	12-17 18-23 24-29 30-35 ≥36	Chiwerengero cha anthu ogona munyumba usiku wa mbiri	1-3□ 4-6□ 7-9□ ≥10□
Nambala ya chosungilamo		EDD	
Siku la kubadwa		Chiwerengero cha anthu ogona munyumba usiku wa mbiri	
Wa mu Zambia	Inde Iyayi	Makalidwe wa nchito kapena kusebenza	Basebenza□ Sibasebenza□ Mwana wa sukukulu□ House wife□

Kodi mimba iyi ina konzekeledwa?		☐ Inde [0]	☐ Iyayi [1]
Mumvera bwanji ku Khala na mimba		☐ Kukondwa [0] ☐ Osa kondwa [1] ☐ Mwina ……[1]	
Kodi mukali pamodzi ndi amuna banu/shamwali		☐ Inde [0]	☐ Iyayi[1]
Kodi muzimvera kuti Akusamalirani?		☐ Inde [0]	☐ Iyayi [1]
Kodi mumvera kuti muli ndi banja ndi a bwenzi amene Aikako nzeru kwa mumene mumverera?		☐ Inde [0]	☐ Iyayi [1]
Kodi muli ndi a banja ndi a bwenzi amene aku thandizani mwa ku gwira nchito?		☐ Inde [0]	☐ Iyayi [1]
Munga nene bwanji kugwirizana kwanu ndi a mai banu?		☐ Ana mwalira [1] ☐ pa libe ku gwirizana/palibe [1] ☐ kugwirizana ni kwa bwino [0] ☐ Kugwirizana ni koipa [1]	
Kodi amuna anu/shamwali kapena munthu ali yense mu banja lanu ndi wa ndeu kwa inu?		☐ Inde [1]	☐ Iyayi [0]

Kodi muna kumanapo kale ndi kunyozedwa kwa mutundu uli onse wa pa thupi,mu maganizo,		☐ Iyayi [0] ☐ Inde kwa pa thupi [1] ☐ Inde kwa mu maganizo [1] ☐ Inde ko gonewa [1] ☐ Inde ko gonewa mo kakamizidwa [1]	

kugonewa, kugonewa mo kakamizidwa?			
Kodi muna tayapo kale mimba, kuchosapo kale mimba, kubala mwana osalimba, kapena kuona imfa ya mwana wa khanda		☐ Iyayi [0] ☐ Kutaya mimba [1] ☐ Ku chosa mimba [1] ☐ kubala mwana osalimba [1] ☐ Imfa ya mwana wa khanda [1]	
Kodi muna khalapo khale ndi zinthu zina zovuta chaka chatha kunja kwa ku pita mwa chabe/kutaya mimba kubala mwana wosalimba, kapena imfa ya mwana (monga imfa ya wina ba banja wamene munali naye pafupi, ku chika munyumba, ku taikidwa ndi nchito)?		☐Inde [1] ☐ Iyayi [0]	
Ngati ndi inde mundi uzeko pang'ono za che(No scoring)		☐Mu natikidwa wina munali naye pafupi [0] Nchito ina sila[0] Muna samuka ku pita kukhala mu nyumba ina [0] ☐Matenda [0] Kusidwa mu ukwati [0] Kusabala [ ] ☐Ku pita kundende[0] Kwina	
Kodi muna taikidwapo kale mtima kwambiri, kudela nkhawa kapena ku vutitsidwa ndi vuto lo fulumira?		Iyayi [0] Kutaikidwa Mtima [1] Nkhawa [1] Vuto lo fulumira [1]	

ZOPEZEDWA ZONSE PAMODZI	1 2 3 4 >>>>>>>>>>>>>>>>>>>>>>>> Yang'anani 5 >>>>>>>>>>>>>>>>>>>>>>>> Yang'anani 6 >>>>>>>>>>>>>>>>>>>>>>>> Yang'anani 7 >>>>>>>>>>>>>>>>>>>>>>>> Yang'anani 8 >>>>>>>>>>>>>>>>>>>>>>>> Yang'anani 9 >>>>>>>>>>>>>>>>>>>>>>>> Yang'anani 10 >>>>>>>>>>>>>>>>>>>>>>>> Yang'anani 11 >>>>>>>>>>>>>>>>>>>>>>>> Yang'anani 12 >>>>>>>>>>>>>>>>>>>>>>>> Yang'anani
Mu ma sabata a wiri apita, kodi masiku ena muna mvapo kale kulepera ku dela nkhawa/kodandaula kapena ku ganiza kwambiri	☐Inde [1] ☐ Iyayi[0]
Mu ma sabata a wiri apita, kodi masiku ena muna mvapo kale kufoka, kutaya mtima kapena ku sowa chiyembekezo	Inde [1] Iyayi [0]

Mu ma sabata a wiri apita, kodi masiku ena muna mvapo kale ndi ma ganizo ndi malingaliro yo zipweteka nokha kapena ku zipha	Inde [1] Iyayi [0]
Uphungu/Ulangizi Wo perekedwa	Inde Iyayi
Kuvomereza Uphungu/Ulangizi	Inde Iyayi

Appendix 9: Demographic and screening tools Bemba

Ishina lyandi nine... Natukwata isambililo ilya kulolesha atemwa ukuceceta pamafya ayashingwana nabanamayo abali pabukulu elyo napanuma yakupapa, ayatebelela imitontonkanishe yabo (Mental Health) pa Kavu Health center. Ili Sambililo lisendelwe naba Alphonse Musabyimana nga ichiputulwa chimo ichilingile ukufikilishiwa pa kupelwa ichipepala cha Master's degree mukuchingilila imitontonkanishe pa Nova medical school ku Portugal mu musumba wa Lisbon. Isambililo ilyo balechita napa nomba, bali mu mwaka wa kulekelesha. Ili Sambililo lile bimbwamo banamayo abalipa bukulu abesa ku manshiko ya Antinatal na banamayo panuma yakupapa abesa ku manshiko yabo panuma yakukwata abana abali abaipelesha ukuibimbamo mukusambilila ku. Ifinono efyacitwa mulyulu ulubali ulwakufwailisha imibele iititikisha banamoyo abali pabukulu napanuma yakupapa mumanshiko yamu Zambia. Umulandu uukalamba uwa ili sambililo kusanga amafya aya shingwana nabanamayo aya cititka elyo nefyo balingile ukupokelela ifibombele fyakuceceta kubalefibomfya elyo nabale pela umulimo wakuceceta ubumi mukuceceta abali pabukulu elyo napanuma yakupapa muli aya amanshko pa Kavu Health Center. Ili sambililo lyalalenga abalefwailisha elyo nabantu fye bonse ukwishiba bwino pali ubu bwafya elyo nokwafwilisha abakuntash mukupekanya kwa fya bumi ukulolekesha pali ubu bwafya mucifulo ca kupela ubumi ubwafikapo. Uyu emulandu wine imwe pakulundu kwenu mukutupela ifshinka elyo nokwasuka bwino amepusho kwa lalenga ubwishibilo ubwalinga kabili ubwafikapo. Ukuba uwakuibimba mulyiku ukusambilila tacili namulandu iyo. Mwalasekelamo pakwishiba pafyakusunga abana panuma yakupapa pamibele yamitontonkanishe yenu (mental status) elyo mwalapelwa nobundapishi apali ukakabilwa.

Namilalika bonse ukuibimbamo muli uku kusambilila. Nalamipusha amepusho ayali pacipepala nkwete. Bakepusha tabasende nshita ucila pali ba minute 20. Ukuibimbamo kwenu kwalatotelwa apakalamba ngananshi. Elyo muli abantungwa ukukanaibimbamo muli uku ukusambilila atemwa ukufumyamo ilangulushi panshita iili yonse ukwabula umutunganya mumubela mundapilwamo mulicino icipatala. Ilyashi lyonse ilyalasendwa kuli imwe panuma yakulanshanya ukulolenkana neli Isambililo lya lasungwa munkama pantu tatwabomfye amashin ayapwililika lelo ifya tampila ko nangula amanambala eyalabomfiwa mukusende ilyashi eyo nokubika ilyashi lyonse pamo (data analysis). Ukusuminisha kwenu kwalashinikishiwa mukusaina atemwa ukufwatika icikukumo cenu pacipepala ca kusumininapo (consent form). Nga cakutila mwasuminisha kuti namba twatendeka.

Consent form

(Ukwisusha elyo nokubengwa kuuleasuka mucitundu asala umwine)

Ili lipepala likankala ililemipela insebo pali ili sambililo tukwete. Napapata, belengeni nangula umo amibelengela elyo ipusheni amepusho apo tamumfwile.

Nga mwasala ukuibimbamo muliukusambilila uku, mwalashinikisha ukupitila mukusaina atemwa ukufwatika icikumo pa ncende iipelwe. Muli abantungwa ukukanaibimbamo muli uku ukusambilila, ukwabula ubwafya ubuli bonse mubucingo na ubundapishi mupokekela palicino Icipatala. Kabili muli abatungwa ukufumamo muli uku ukusambilila panshita iili yonse mwafwaya ukucita ici, elyo mukatwalila ubundapishi bumo bwine mupoka lyonse.

UBUKANKALA BWA UKUFWAILISHA NE NKOKA (PURPOSE OF RESEARCH AND PROCEDURE)

Umulandu uukulamba uwa ili isambililo ku pampamika nga cakutila pa K H C kuti caba icaanguka ukutendeka ukuceceta ubumi bwa mitontokanishe (mental health screening) Mumanshinko yabanamayo abali pabukulu napanuma yakupapa. Banamayo bamo abale sangwa kuli uyu umulimo bali bateka mufipatala ficeceta ubumi bwa mitontonkanishe (Psychiatric wards) panuma yakupapa, pamulundu wakutila baleshingwana namafya ya depression. Depression kulibanacifyashi yali kwata inshta iipi elyo neitali kuli nacifyashi, Umwana, Ulupwa elyo nabekala mushi bonse. Ngacakutila aba banamayo balicecetwa imitontonkanishe yabo (Mentally screened) munshita bali pabukulu na panuma yakupapa lulya baleisa mukupimwa, limbi ubu ubwafya bwa depression nga bwalisangwa bwangu, elyo limbi nokutekwa mufipatala fya mashilu limbi kwalicingililwa. Ilyashi mwalatupela mukulanshanya konse, pa kusaina icipepa chakusuminishishapo (consent form), na mukubomfya ifibombela fyakucecetelamo (screening tools) ifyo mwalapokelela, fyalatwafwa ukushininkisha ukutila ifibombelo ifi filebomba bwino elyo nafipokelelwa kubalefibomfya. Ifyalatumbukamo muli uku ukusambilila kulinokwafwa abapekanya ifya bumi mucifulo ca kubombesha na ukupela ubumi bwafikapo, na ukupampamika ukucecetwa kwabaninefwe abali pabukulu napanuma yakupapa muli aya amanshiko.

AMAFYA NA UBUSUMA

Ukuba uwakuibimbamo muli uku ukusambilila tamuli ubwafya ubulibonse. Mwalanonkelamo apakalamba mukwishiba ukuisunga elyo muli pabukulu napanuma yakupapa mukiwishiba pa mubela wakalango (mental status). Elyo mwalapelwa nobundapishi apalekabilwa.

INKAMA

Ilyashi lyonse ukubikapofye nefyantampila kumashina yenu fyalasungwa munkama. Ilyashi lyonse ilyalasendwa pepela lyakwipushishapo lylaonaulwa panuma yakwingisha mu computer umo ifyatampila kumashina yenu fyalabikwapo kuma nambala ya computer kuuleibimbambamo onse.

Pamepusho yonse palili isambililo muli abantungwa ukutumina.pamanambala 09772425294 nangula 0975906750 nangula 0965078789

E.M AIL: musabyimana2003@yahoo.fr

Natotela sana panshinta yenu.

Nasumina ukuibimbamo muli ili isamililo

Signature...

Witness...

Date……

IFIBOMBELO FYAKUCECETELAMO

1. SOCIAL DEMOGRAPHIC DATA
Ubushiku

Ishina (Icatampilako)

Ishina lya batata (Icatambilako)

Muri bena Zambia?

Yes

No

Imyaka 12-17

18-23

24-29

30-35

≥36

Ubushiku ubulesubilwa ukupapilapo (EDD)

G1-3

Impendwa yamafumo yonsepamo (Gravidity#pregnancies) G4-6

≥7

P1-3

P4-6

Impendwa yabana abafyelwe abatuntulu (Parity-#live births) ≥7

Abantu abanono

Abengikala sana Abengi Abashikala mukalale

Impendwa ya Imiputule yakulalamo 1-2

3-5

≥6

Impendwa yabantu abalala munganda inshita ishingi	1-3
	4-6
	7-9
	≥10
Palwa Imilimo	
	Ukuibombela (Self-emloyed)
	Ukubomba imilimo kumo (Employed) Nshibomba (Unemployed) Umukashi wapanganda (Housewife) Umwana we sukulu (Student)

Palwa amasambililo (Educational Level)	**Nshasambilila (None)**
	Isukulu lyakutendeka (Primary education) Isukulu lyakusekondali (secondary Education)
	Isukulu lya pamulu (Tertiary education)

The Edinburgh Postnatal Depression Scale

Ndeumfwa kwati ninkwata ifumo nangula umwana.

Ngefyo ulinefumo nangula naukwata umwana, kuti twatemwa ukwishiba efyo muleumfwa. Kuti catwafwilisha ukusala ubwafwilisho ubusuma kukukabila kwenu. Nelyash lyonse mwalatupela lyalasungwa ilyankama.

Kuli ukusala pamasuko yane (4) cilalipusho. Twapapata shingulusheni ilipalene sana kufyo mwaleumfwa mushiku cinelubali (7 days) tefyo muleumfwafye lelo fyeka iyo.

Munshiku cinelubali (7 days) ishyapita:

Nalemonafye ifuntu lubali ifyakusekesha [0]

Temubwingi pali nomba. [1]

Mucine tefingi nomba. [2]

Tapali nangu cimo [3]

Nalilolekesha kuntashi nefintu ifyakusekelela:

Ngefye nalecita lyonse [0]

Panono ngofyo nalecita [1]

Panono sana ukucila ifyo nalecita [2]

The Edinburgh Postnatal Depression Scale (EPDS)

Tafyalecitika [3]

Naleiseka nemwine ifitntu nga fyalubana,elyo tawali mupuso wandi

Ee , munshinta ishingi [3]

Ee, munshita shimoshimo [2]

Telingi sana [1]

Awe, tafyacitikapo [0]

Naliba uwasakamana, elyo nshaishiba icalenga

Awee, tafyacitikapo [0]

Taficitikacitika [1]

Ee, limolimo [2]

Ee, lyonse lyonse [3]

Ndomfwa umwenso na ukuipanika elyo nshaishiba icalenga

Ee, ilingi sana	[3]
Ee, inshita shimoshimo	[2]
Awee, telyonse	[1]
Awee, taficitika	[0]

Nalekwata ukushupikwa pakucita ifintu

Ee, inshita ishingi nshikwanisha	[3]
Ee, inshita ishimoshimo nshikanisha ngefyonalekwanisha	[2]
Awee, inshita ishingi nalekwanisha fye bwino	[1]

No, I have been managing as well as ever [0]

Nshakwata insansa elyo ndashupikwa na ukulala

Ngefye nalecita lyonse [3]

Panono ngofyo nalecita [2]

Panono sana ukucila ifyo nalecita [1]

Tafyalecitika [0]

Ndomfwa ukufulwa elyo nobulanda

Ngefye nalecita lyonse [3]

Panono ngofyo nalecita [2]

Panono sana ukucila ifyo nalecita [1]

Tafyalecitika [0]

Naliba uuwabula insnsa icakutila ndilafye

Ngefye nalecita lyonse [3]

Panono ngofyo nalecita [2]

Panoono sana ukucila ifyo nalecita [1]

Tafyalecitika [0]

Ndafwaya ukuipaya na ukuputukisha umweo wandi

Ee, ilingi sana [3]

Ee, inshita shimoshimo [2]

Awee, telyonse [1]

Awee, taficitika [0]

Question 7: Nshakwata insansa elyo ndashupikwa na ukulala:

Ceceteni ngacakutila nacifyashi alekwata ukushupikwa ukulala pamulandu wafyo aleumfwa nangula pamulandu wakunkana umfwa bwino pantu alinefumo. (Check if the mother is having difficulty sleeping because of her feelings, or because of being physically uncomfortable due to the pregnancy).

Question 10: Ndafwaya ukuipaya na ukuputukisha umweo 'I have thought of harming myself or ending my life.'

If the mother gives an answer with a score of 1, 2 or 3 on this question, you must ask her further questions to determine if she is suicidal.

Scoring

- Below 10 = the mother is probably fine and does not need to be referred
- Above 10 = she is at risk of depression and anxiety and may need to be referred
- 13 and above = the women needs to be referred

If the mother has previously attempted suicide, or has a thought-out plan for how she may harm herself, you need to refer her URGENTLY.

It does not matter what her overall score is.

The Risk Factor Assessment (RFA)

This questionnaire was developed by the PMHP team in Cape Town. While the EPDS screens for symptoms of maternal mental illness, this questionnaire assesses the risk factors for mental illness.

The Risk Factor Assessment (RFA) Umubela wandi apanomba ndinefumo/nangula nalikwata umwana. Ukufwaisha kwesu kwishiba efyo umubela wenu uli paliinonshita muli pabukulu/ apa nomba mukwete umwana wenu. Uku ukufwilikisha kwalatwafwa ukusala ubundapishi ubusuma ngamwakabila. Ubwasuko bwenu bwalasungwa munkama. Twapapata, asukeni mukusumina (yes) atemwa mukukana (no) kumepusho ayakonkelepo. Chongei mukabokoshi.

Question	Yes	No
1. Ningumfwa insansa pakukwataI/ ukukwata umwana.	Yes	No
2. Nalekwata ifintu ifyakosa ifyaIe nctikila mumwakauwapwa, ifyapala; ukulufya umutemwikwa, ukulufya incite yandi nangula ukusha Inganda, nafimbipo.	Yes	No
3. Abalume bandi/ Umwaume njenda nakwe tucilibonse.	Yes	No
4.Ndofwa ukutila abalume bandi/ umwaume njenda nankwe alansakamana	Yes	No
5. Abalume bandi/ Umwaume njenda nakwe nangula abotwikala nabo kunganda balaba cimfulunganya kuli ine.	Yes	No
6. Balupwa bandi na banandi balansakamana efyongumfwa..	Yes	No
7. Nalipita mufya kukucula kunuma ifyapala ukucushiwa kumubili, nakufyongufwa elyo na ukupatikishiwa insuna.	Yes	No
8. Balupwa bandi na banandi balangafwa mufyo ndekabila	Yes	No
9. Nalikwata ubwampano ubusuma naba Mayo bandi. Langeni (no) ngacakutila balifwa	Yes	No
10.Nalipita muku mufintu pamo ngefi; ukonaika kwefumo, ukufumya kwefumo, ukufyala umwana uushilakosa, na ukufwa kwa mwana panuma yakufyalwa.	Yes	No
11. nalikwatapo ubwafya bwa depression,ubwafya ubwabula ukwenekela nangula ukusakamana kunuma.	Yes	No

Scoring

Question	Yes	No
1	0	1
2	1	0
3	0	1
4	0	1
5	1	0
6	0	1
7	1	0
8	0	1
9	0	1
10	1	0
11	1	0

. Ngacakutila namayo ukusankanya impendwa kwafika shitatu (3) na ukucila, Namayo ninshi ali pabwafya alingile ukumutuma kuli ba counsellor ukwabula ukuposa amano kuli EPDS.

Appendix 10: Demographic and screening tools Nyanja

DZOPIMILAKO UMOYO PALI MA PUNDZIRO YA EPDS NA RFA(CINYANJA) DZIDZI BISO NDI KUVOMELEKEDZA

Dzila langa ndine… .....Tili paku cita mapundziro oyanganira pali dzintu dzo cita nao cenji nao vomekedzedwe wa mapundziro ya ubwino wa mmmutu wa muntu makamaka ku langanira pali adzimai amamimba oyenda ku onewa pa mimba yawo na adzimai oyenda ku onewa pambali yo bala mwana pa KAVU Health Centre. Aya ma pundziro ocitiwa kuli ba Alphonse Musabyimana kuti ba tsiridze mapundziro aci kuru wa Masters Degree kulanganira pali ubwino wa mmutu wa muntu ku skulu kwa Nova Medical Scool ku Lisbon kucalo ca Portugal wamene ali kutsiridza. Aya pamundziro yadza yanga nira pali madzimai amamimba oyenda kucipatala kuonewa na aja adzimai acoka ku bara ana oyenda kuonewa pa umoyo wabo na mwana adzaka vomera kutandidza muli aya mapundizro. Nivintu vingo'ono vopedzeka vinacitiwa ku langanira pali mapundziro ya kudwala ku tsokonedzeka mmutu kuli adzimai amamimba na aja wa coka ku bala mucalo ca Zambia. Ukulu wama pundziro aya niku pedza dzintu dzo vomelekeza kulangalina pali ubwino wa mmutu wa adzimai amamimba na aja obala kuli bantu bosebenzela pa KAVU Health Centre. Aya ma pundziro opasa muntu oya cita na antu oyaberenga cidzibitso pali vuto ya bwino wa mmutu wa muntu no ku tandidza akuru akuru utsebendzera kuli dzintu dza ubwino wa umoyo kudziba dzo cita kuti antu ankare bwino. Ni cifukwa ca ichi ati tandidzo yanu muli aya ma pundziro niyacikulu. Ku tandidza muli aya mapundziro kulibe coyipa ciliconse. Mudza tandidziwa na dzidzi biso pali ubwino wa mmutu wanu na ku onedwa pali umoyo wanu pambali paku bala mwana.Ni ku itanani ku citako aya pamundziro naimwe. Ndi dza ku funtsani koni ma funtso otandidza ndi ma pundziro aya, aya ma funtso siya dza cedwa, tidza pempako ka ntawi kango'ono. Tandidzo yanu muli aya ma pundziro niya ci kuru maningi lomba cilikuli imwe ku sanka pali ku tandidza nangu kukana nangu kuleka nga mwamvera kuti tsimunga kwanise ku pitilidza ku tandidza muli aya ma pundziro.Aya mapundziro niyo sungiwa bwino maningi elo dzina lanu siyiza lembeka yonse. Ku vomeledza kwanu kudza dzibika na kukwalaula kwa dzina lanu pali cipepa ca ci vomelekedzo. Ngati Mwa vumela ku pitilidza na kutandidza muli aya mapundiro tidza yambako manje.

Ici ci pepala co patsa dzidzibiso pali aya mapundziro ye ticita nica cikuru. Mwapempedwa kupita mo muli ici ci pepala noku funtsa mafuntso yali yonse pali dzo mene ticita. Muka vomera kutandidza muli aya ma pundziro mudza funtsi dwa ku kwalaula dzina lanu nangu kuyika ci dindo

caci kumo pali ici cipepala. Muli omasukidwa ku vomela nangu ku kana ku pitilidza nangu kuleka pakati muka pedza ko vutu iliyonse. Ku kana nangu kuleka kutandidza muli aya mapundziro siyadza lengesa umoyo wanu ku leka ku onekedwa kucipatala, dzontse dziza pitilidza.

DZOPIMILAKO UMOYO PALI MA PUNDZIRO YA EPDS NA RFA(CINYANJA)

DZIDZI BISO NDI KUVOMELEKEDZA

UKULU WA AYA MA PUNDZIRO

Ukulu wa aya ma pundziro niku dziba ngati pa St. Dominic's Mission Hospital nico onekedwa ku leta mankani yo onela pa ubwino wa mmutu waba adzimai ba ma vumo na ba ja ocoka kubala ana. Adzimai enangu odzi pedza ku cipatala kwa antu otsokonedzeka pambali yo bala ana cifukwa co tsokonedzeka mmutu. Ku tsokonedzeka mmutu kuli adzimai ku ma citaka paka ntawi ka kong'ongo nangu pantawi itali, iyi vuto inga vutisileko na ana na mabanja na muma mundzi.Ku pimiwa kwa ubwino wa mmutu kwa musanga kutandidza ku cingirira ku dwala kwa ku tsongonedzeka ndi ku ikiwa ku cipatala kwa ofunta. Ma yanko yanu kuli aya ma funtso yadza tantidzira ku peza njila yo pimila ubwino wa mmutu na ku vomekedzewa kwa aka kapimidwe ka ubwino wa mmutu. Aya ma yanko yo coka muma pundziro aya ya dza tandidza akuru akuru oyanganira pa umoyo ku tandidzira antu ambiri ndi kunkala na umoyo wa bwino, maka maka adzimai ama vumo na aja ocoka kubala ana oyenda ku onedwa pa umoyo.

DZOIPA NDI DZABWINO

Ku tandidzira ndi ma pundziro aya kulibe co ipa nangu cimodzi. Dzabwino ndi dzakuti adzimai adza nkara ndi kuonewa ubwino pa vumo na paku bala mwana na ubwino wa mmutu.

KATSUNGIDWE

Dzontse dzomwe dzilikutengewa apa dzidza tsungiwa bwino maningi, antu ena saza kudzibani kuti ndimwe acite. Dzontse dzo tengewa pa ci pepapla ici dzi dza ikiwa bwino mu ma computer noku ononga cipepala comwe co. Dzina lanu yonse siza lembe dwa, ku dza lembe dwa cabe ma nambala yomwe tidza ku patsani.

Ma funtso aliyonse yanga funtsiwe kuli awa ocita aya mapundziro, munga mutumili lamia pa nambala ya 0977245294 nangu 0975906750 nangu 0965078789 nangu kuba lembela nkalata yama laiti ku musabyimana2003@yahoo.fr

Mwatama ndi tsiwa pa ntawi mwa pasa.

Ndavumela ku tandidza ni mapundziro aya

DZOPIMILAKO UMOYO PALI MA PUNDZIRO YA EPDS NA RFA(CINYANJA)

DZIDZI BISO NDI KUVOMELEKEDZA

Cikwalaulo ca dzina…… Oonako…… Nsiku……

DZOPIMILAKO UMOYO PALI MA PUNDZIRO YA EPDS NA RFA

Nsiku	
Coyambirako cadzina loyamba	
Coyambirako cadzina lotsirikidza	
Dzaka	12-17
	18-23
	24-29
	30-35
	Kupita pa 36
Nsiku Lo cetekela ku bala mwana	
Muli mwa mcalo ca Zambia?	Inde
Mwankalapo nama mimba yangati?	1-3
	4-6
	Kupita pa 7
Muna balapo ana amoyo angati?	1-3
	4-6
	Kupita pa 7
Konkala	Kocepa antu
	Kwapakati kutsa paka ndipontso kutsa cepa antu
	Kopaka antu
	Kumundzi

Kogonela kungati Myumba?	1-2
	3-5
	Kupita pa 6
Ni antu angati amene ama gona myumba kwambiri	1-3
	4-6
	7-9
	Kupita pa 10
Kodi mutsebenza nshito yabwanji?	Nidzi sebenzera neka
	Ndi sebenzera antu
	Sindi sebenza
	Ndine Mkadzi wapanyuma
	Ndili ku pundzira
Mapundziro	Sindina pundzireko Kupundzira kwa pango'ono
	Kupundzira kwa cikulu
	Kupundzira kwa cikulu maningi

COONETSA 1: KAPIMIDWE KOONA PALI KUTSOKONEDZEKA KWA AZIMAI PAMBALI POBALA ANA KWA EDINBURGH (EPDS)

Iyi EPDS ili na ma funtso oonera ngati adzimai anga nkale naku tsokonedzeka. Aya ma funtso yanga sebenzesewe pali adzimai alinama vumo yaana na pali aja adzimai ocoka kubala ana. Aya

mafuntso niyo sibenzedwa maningi mu dziko. Aya ma funtso ya vomekedzeka nama pundziro ambiri amene antu ana citika pali iyi nkani mu vyalo vambiri.

Aya matsiku 7 8apita:

- Ndili kuona kutseketsa kwa dzintu:

  Mumwe ndima ona ntawi dzonse [0]

  Kupamba na ntawi dzonse [1]

  Sima ningi ntawi dzino [2]

  Yayi, nangu pango'ono peka [3]

- Ndili kulanganira pali ku mvera bwino kucita dzintu:

  Kucira ntawi dzonse [0]

  Kupamba na ntwawi dzonse [1]

  Kusiyana maningi na ntawi dzonse [2]

  Yayi, nangu pango'ono peka [3]

- Ndi mazdi soka dzintu dzika yenda kuyipa dzamene tsinacite kuyipa:

  Ntawi dzonse [0]

  Ntawi dzina [1]

  Ntawi dzingo'ono [2]

  Yayi, nangu pango'ono peka [3]

- Ndima nkala nama ganidzo odanlaula maningi kulibe cifukwa:

  Yayi, nangu pango'ono peka [3]

  Ntawi dzingo'ono maningi [2]

  Ntawi dzina [1]

  Ntawi dzonse [0]

5. Ndimankara oyopa kulibe cifukwa:

   Ntawi dzonse [3]

   Ntawi dzina [2]

   Ntawi dzingo'ono [1]

   Yayi, Nangu pango'ono peka [0]

6. Ndima pedza fvuto mu dzintu dzonse

Inde, ntawi dzonse sindi makwanitsa kucita dzintu [3]

Inde, ntawi dzambiri sindi makwanitsa kucita dzintu [2]

Yayi, Ntawi dzambiri ndi makwanitsa kucita dzintu [1]

Yayi, dzonse dziri cabe mushe [0]

7. Ndima bvutika kugona bwino

Ntawi dzonse [3]

Ntawi dzina [2]

Ntawi dzingo'ono [1]

Yayi, Nangu pango'ono peka [0]

8.Ndiri kumvera kuyipa ndi ma dandauro:

Ntawi dzonse [3]

Ntawi dzina [2]

Ntawi dzingo'ono [1]

9.Ndima mvera kuyipa naku lira misozi:

Ntawi dzonse [3]

Ntawi dzina [2]

Ntawi dzingo'ono [1]

Yayi, Nangu pango'ono peka [0]

10. Ndiri kuganidza kudzi cita dzo yipa ndi kudzi paya:

Ntawi dzonse [3]

Ntawi dzina	[2]
Ntawi dzingo'ono	[1]
Yayi, Nangu pango'ono peka	[0]

NB: Funtso la 7 "Ndima bvutika kugona bwino"

Onani ngati mdzimai ali ku bvutika kugona mulandu wama ganidzo ndiku mvera kuyipa nangu obvutika mulandu wa vumo wa mwana omwe alinayo.

Funtso la 10 "Ndiri kuganidza kudzi cita dzo yipa ndi kudzi paya".

Ngati mdzimai ayanka yanko yamapendedwe ali amodzi, awiri nangu atatu pali funtso ayi, muyenekere ku funtsa mafuntso yokonkapo kuona nganti mdzimai uyo oganidza dzo dzipaya.

MAPENDEDWE

Dzingo'no pali 10= Mdzimai alicabe bwino paliye milandu dzoipereka kutsogoro

Dzambiri ku cila pali 10= Mdzimai angankare nabvuta ya mmutu ndi kumvera kuyipa kudwala ntenda yama dandawuro

Dzambiri Ku cila pali 13=Mdzimai ayenekera kupereka kutsogoro kuwoneka, odwara.

Ngati mdzimai ana setsapo kudzi paya nangu ociganidzapo, langanilani pali dze mdzimai uyu anga cite kudzi cita dzoyipa, mperekeni kutsogoro kucipatala awonewe Msanga msanga.
Mapendedwe a uyu mdzimai alibe ncito, oyenekera kuwonewa.

KUWONA KWA BVUTO/RISK FACTOR ASSESSMENT (RFA)

Kutsiyana na EPDS yamene ilanganila pali ubwino wa mmutu wa adzimai ama bvumo a bana, aya ma funtso yo ona bvuto wa kudwala kwa mu mutu (kutsokonedzeka)

KUWONA KWA BVUTO/RISK FACTOR ASSESSMENT (RFA)

Nkani langa lomba pambali yonkara ndi bvumo ya mwana/Yo bala mwana

Tili mukufuna kudziba mwamene nkani yanu ilili pa bvumo yanu ya mwana/ lomba pambali yo bala mwana. Aya ma funtso yanga titandidze kuona mwamene tinga kutandidzireni. Mayanko yanu ya dza tsungiwa bwino ndi nkama. Yankani "Inde" nangu "Yayi" kuli aya mafuntso yokonkapo.

Funtso	Inde	Yayi
1. Ndili kumvera mushe paku nkara na bvumo yamwana/paku nkara ndi mwana	Inde	Yayi
2. Ndintu dzoyipa dzondi citikira muli caka copi(monga kufedwa, nshito kutsira nadzina)	Inde	Yayi
3. Tilipamodzi muci kondi ndi amuna anga	Inde	Yayi
4. Amuna anga ondiyikir ako ndzeru(Kambani yayi ngati molekana)	Inde	Yayi

5. Amuna anga ndi antu ena omene tinkara nao ondi menya
6. Adzanga ndi ambululu anga ondi tsamarilira
7. Ndina pitamo muku siwa kudara (physical abuse, sexual, rape, etc.)
8. Ambululu anga ndi adzanga onditandidzira munjira dzambiri
9. Ndili kumverana na amai anga (kambani yayi ngati amai anu ucifa)
10. Ndina pitamo muli idzi dzintu dzo konkapo, nangu ci modz i :

    Kufedwa mwana pobala, kucotsa mbvumo yamwana, kubala mwana okufa nangu kufedwa mwana obadwa kudala

11. Ndiri kudzi dzonda ngati dzintu dza yenda kuyipa dzamena sindinacite:

Ntawi dzonse [3]

Ntawi dzina	[2]
Ntawi dzingo’ono	[1]
Yayi, Nangu pango’ono peka	[0]

MAPENDEDWE

Funtso	Inde	Yayi
2	1	0
3	0	1
4	0	1
5	1	0
6	0	1
7	0	1
8	1	0
9	1	0
10	1	0
11	1	0

Dzambiri Ku cila pali 3 (≥ 3): Mdzimai ayenekera kupereka kutsogoro kuwoneka, odwara.

Appendix11: Demographic data and screening tools in English

My name is..... We are conducting a study looking at the factors associated with the feasibility and acceptability of mental health screening tools in antenatal and postnatal programmes at Kavu Health Centre (KHC). This study is being conducted by Mr Alphonse Musabyimana as partial fulfillment for the award of the Master's degree in Primary Care Mental Health at the Nova Medical School, Lisbon, Portugal which he is pursing and now in his final year. The study will involve the pregnant women attending antenatal program and delivered women attending postnatal program who are willing to participate in this study. Little has been done in the area of research on the detection of maternal depression in antenatal and postnatal programmes in Zambia. The aim of this study is to determine factors associated with the feasibility and acceptability of mental screening tools by both service users and care providers in the antenatal and postnatal programmes in Kavu Health Centre. This study will give the researcher and the public in general a better understanding of this problem, and help health planners to consider this problem in their quest to deliver quality services. This is why your contribution by giving us your details and answering to the appropriate questionnaire will be very much appreciated. To be a participant to this study has no risk at all. You will benefit by having a postnatal care and information on your mental status and you will be given treatment where it is needed.

I invite you to take part in the study. I am going to ask you some question based on the questionnaire that I have. The interview will not take more than 20 minutes. Your participation will be very much appreciated and you are free to refuse participation in the study or withdraw at any stage without any prejudice to your usual medical care in this clinic. The information taken from you with regard to this study will be kept confidential as no full names but initials or numbers will be used in collection of information and analysis of the data. Your approval will be confirmed by your signature or your thumb print on the consent form. If you agree to take part in the study we may now proceed.

Consent Form

(To be filled in or read to each respondent in her chosen language.)

This is an important form giving you information about this study that we are conducting. Please read it or someone will read it for you, carefully, and ask questions where it is not clear for you. If you decide to participate in this study, you will confirm by signing or putting your thumb print at the indicated space. You are free to refuse the participation in this study without any risk of

change or influence on your treatment and care that you will be receiving in this clinic. You are also free to withdraw from this study at any time you wish to do so and you will still receive the normal care.

PURPOSE OF RESEARCH AND PROCEDURES.

The aim of this study is to establish whether, at KHC, it is possible to introduce mental health screening in antenatal and postnatal programmes. Some mothers who have been attending this service have been admitted in psychiatric wards after delivery because they were suffering from depression. The maternal depression has short term and long term on the mother, the child, the family and the society in general. If these women had been mentally screened during their antenatal and postnatal bookings, may be this depression could have been detected early, and this admission in psychiatric ward, may be, could have been avoided. The information that you will provide us, by signing this consent form and by filling in the screening tools that you will receive, will help us to confirm that the screening tools are feasible and acceptable by this service users. The outcomes from this study will help health planners, in their quest to deliver quality services, to implement systematic mental screening in antenatal and postnatal programmes.

RISKS AND BENEFITS

To be a participant to this study has no risk at all. You will benefit by having an antenatal and postnatal care and information on your mental status and you will be given treatment where it is needed.

CONFIDENTIALITY

All the information including your initials and your mental status will be kept confidential. The all information collected on the questionnaire sheet will be destroyed after transferring the data to the computer where initials of your names will be replaced by computer number of each participant.

For any queries on this study, you are free to contact him on 0977245294 or 0975906750 or 0965078789

E.MAIL: musabyimana2003@yahoo.fr

Thank you sincerely for your time.

I agree to take part in this study

Signature…… Witness……..…

Date……

SOCIAL DEMOGRAPHIC DATA

Name (Initial)	
Surname (Initial)	
Age	12-17
	18-23
	24-29
	30-35
	≥36
Expected Date of Delivery (EDD)	
Zambian	Yes
	No
Gravidity (#pregnancies)	G1-3
	G4-6
	≥7
Parity (# live births)	P1-3
	P4-6
	≥7
Residential address	Low density
	Medium density
	High density
	Non-urban
# rooms for sleeping	1-2
	3-5

	≥6	
# people sleeping in	1-3	house on most nights
	4-6	
	7-9	
	≥10	
Employment status	Self employed	
	Employed	
	Unemployed	
	Housewife	
	Student	
Educational Level	None	
	Primary education	
	Secondary education	
	Tertiary education	

SCREENING TOOLS

The Edinburgh Postnatal Depression Scale (EPDS)

The EPDS is a set of questions used to assess whether or not a woman may be suffering from depression or anxiety, or both. It can be used antenatally and postnatally.

The Edinburgh Postnatal Depression Scale
My feelings now that I am pregnant or have had a baby.

As you are pregnant or have had a baby, we would like to know how you are feeling. It may help us in choosing the best care for your needs. The information you provide us will be kept private and confidential.

There is a choice of four answers for each question. Please circle the one that comes closest to how you have felt in the past seven days, not just how you feel today.

[SCORES ON RIGHT HAND SIDE]

In the past seven days:

- I have been able to see the funny side of things:

As much as I always could	[0]
Not quite so much now	[1]
Definitely not so much now	[2]
Not at all	[3]

- I have looked forward with enjoyment to things:

As much as I ever did	[0]
A little less than I used to	[1]
Much less than I used to	[2]
Hardly at all	[3]

- I have blamed myself when things went wrong, and it wasn't my fault:

Yes, most of the time [3]

Yes, some of the time [2]

Not very much [1]

No, never [0]

• I have been worried and I don't know why:

No, not at all [0]

Hardly ever [1]

Yes, sometimes [2]

Yes, very much [3]

5. I have felt scared or panicky and I don't know why:

Yes, quite a lot [3]

Yes, sometimes [2]

No, not much [1]

No, not at all [0]

6. I have had difficulty in coping with things:

Yes, most of the time I haven't been managing at all [3]

Yes, sometimes I haven't been managing as well as usual [2] No, most of the time I have managed quite well [1]

No, I have been managing as well as ever [0]

7. I have been so unhappy I have had difficulty sleeping:

Yes, most of the time	[3]
Yes, sometimes	[2]
Not very much	[1]
No, not at all	[0]

8. I have felt sad and miserable:

Yes, most of the time	[3]
Yes, quite a lot	[2]
Not very much	[1]
No, not at all	[0]

9. I have been so unhappy that I have been crying:

Yes, most of the time	[3]
Yes, quite a lot	[2]
Only sometimes	[1]
No, never	[0]

10. I have thought of harming myself or ending my life:

Yes, quite a lot	[3]
Sometimes	[2]
Hardly ever	[1]
Never	[0]

Question 7: ‘I have been so unhappy I have had difficulty sleeping. Check if the mother is having difficulty sleeping because of her feelings, or because of being physically uncomfortable due to the pregnancy.

Question 10: ‘I have thought of harming myself or ending my life.’

If the mother gives an answer with a score of 1, 2 or 3 on this question, you must ask her further questions to determine if she is suicidal.

Scoring

If TOTAL score is:

Below 10 = the mother is probably fine and does not need to be referred

Above 10 = she is at risk of depression and anxiety and may need to be referred

13 and above= the women needs to be referred

If the mother has previously attempted suicide, or has a thought-out plan for how she may harm herself, you need to refer her URGENTLY. It does not matter what her overall score is.

2. **The Risk Factor Assessment (RFA)**

While the EPDS screens for symptoms of maternal mental illness, this questionnaire assesses the risk factors for mental illness.

The Risk Factor Assessment (RFA)

My situation now that I am pregnant/have had a baby.

Question	Yes	No
1. I feel pleased about being pregnant/having had a baby.	Yes	No
2. I have had some very difficult things happen to me in the last year (e.g. losing someone close to me, losing my job, leaving home etc.)	Yes	No
3. My husband/boyfriend and I are still together.	Yes	No
4. I feel my husband/boyfriend cares about me (say 'no' if you are not with him anymore).	Yes	No
5. My husband/boyfriend or someone else in the household is sometimes violent towards me.	Yes	No
6. My family and friends care about how I feel.	Yes	No
7. I have experienced some kind of abuse in the past (e.g. Physical, emotional, sexual, rape).	Yes	No
8. My family and friends help me in practical ways.	Yes	No
9. On the whole, I have a good relationship with my own mother (indicate 'no' if your mother has passed away).	Yes	No
10. I have experienced one of the following in the past: miscarriage, abortion, stillbirth, or the death of a child any time after birth.	Yes	No

11. I have had serious depression, panic attacks or problems with anxiety before.	Yes	No

Scoring

Question	Yes	No
1	0	1
2	1	0
3	0	1
4	0	1
5	1	0
6	0	1
7	1	0
8	0	1
9	0	1
10 11	1	0
	1	0

Because this assessment identifies serious risk factors, a referral is needed with a score of 3 or above, no matter what the mother's EPDS score is.